JP2002-163860

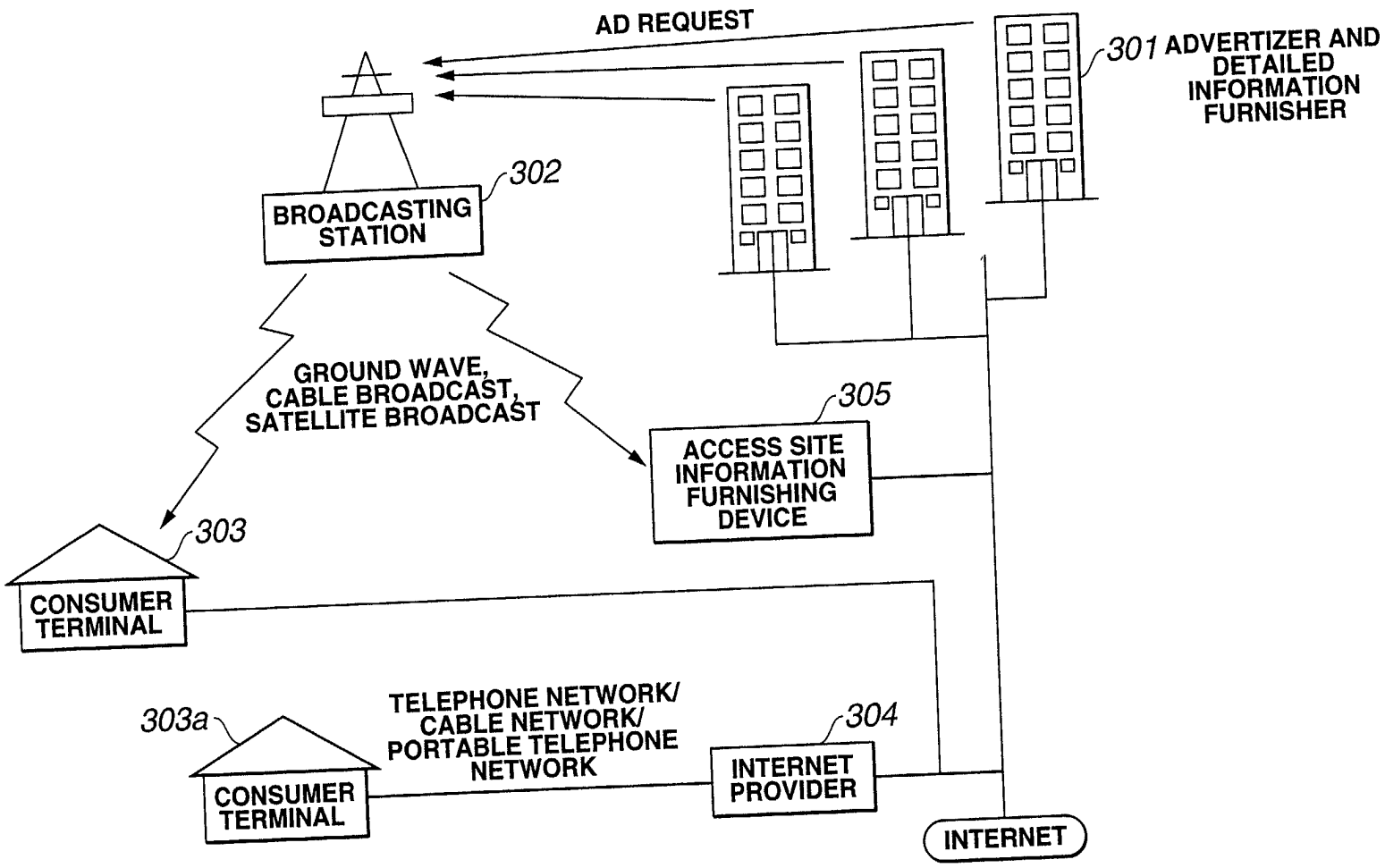


FIG.1

EP02290 T6+28860

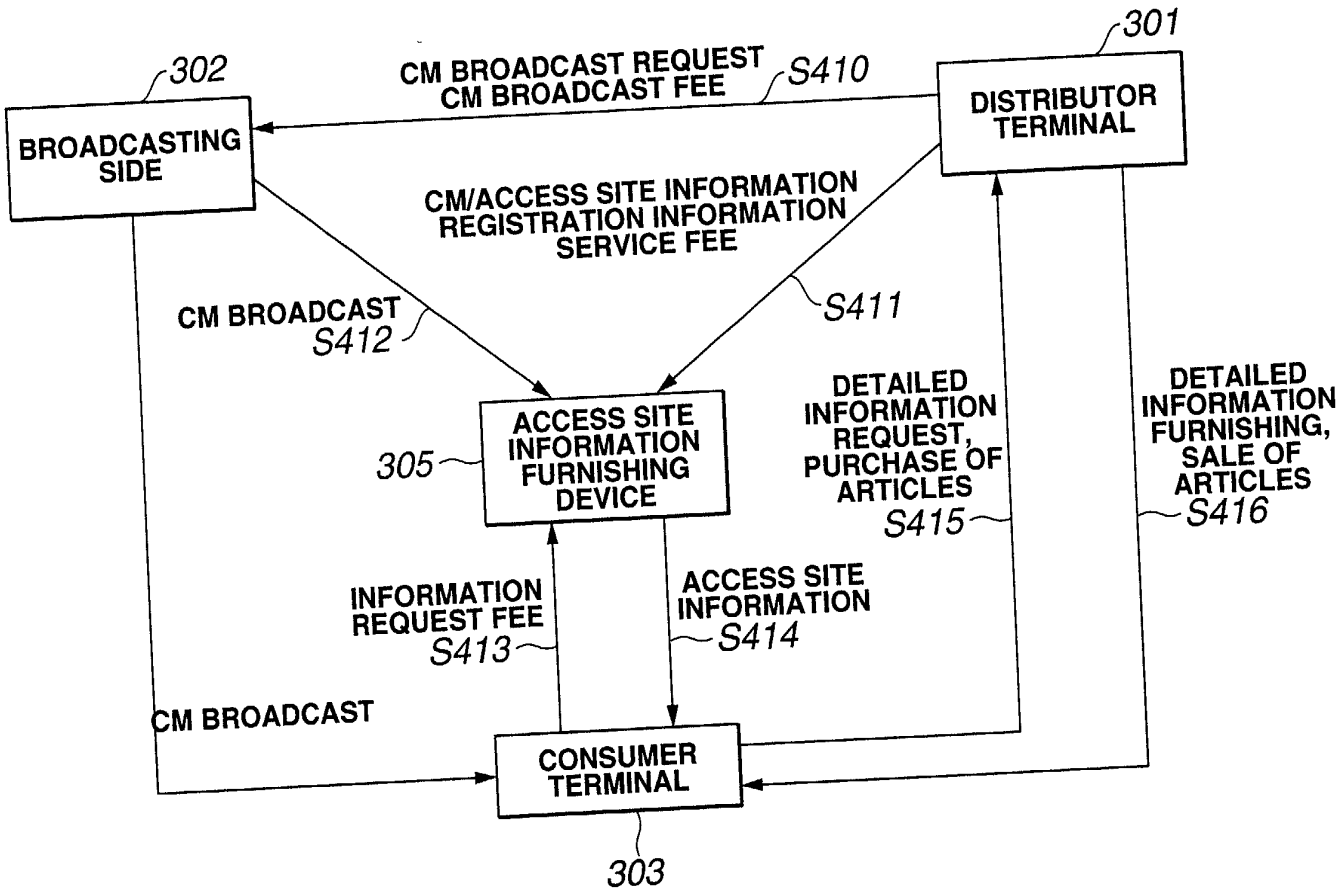


FIG.2

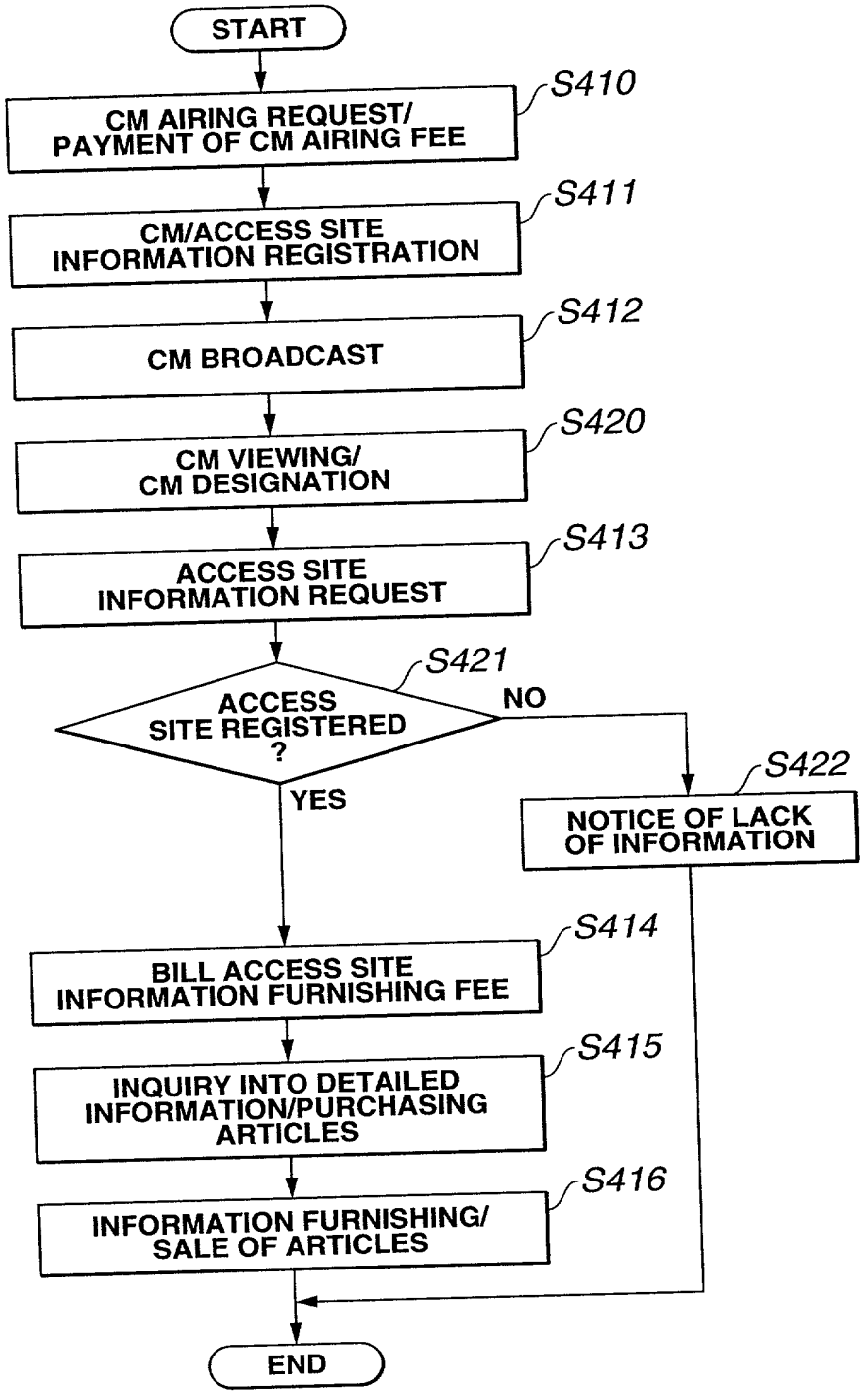

START
CM AIRING REQUEST/ PAYMENT OF CM AIRING FEE
S410
CM/ACCESS SITE INFORMATION REGISTRATION
S411
CM BROADCAST
S412
CM VIEWING/ CM DESIGNATION
S420
ACCESS SITE INFORMATION REQUEST
S413
ACCESS SITE REGISTERED ?
S421
NO
YES
NOTICE OF LACK OF INFORMATION
S422
BILL ACCESS SITE INFORMATION FURNISHING FEE
S414
INQUIRY INTO DETAILED INFORMATION/PURCHASING ARTICLES
S415
INFORMATION FURNISHING/ SALE OF ARTICLES
S416
END

FIG.3

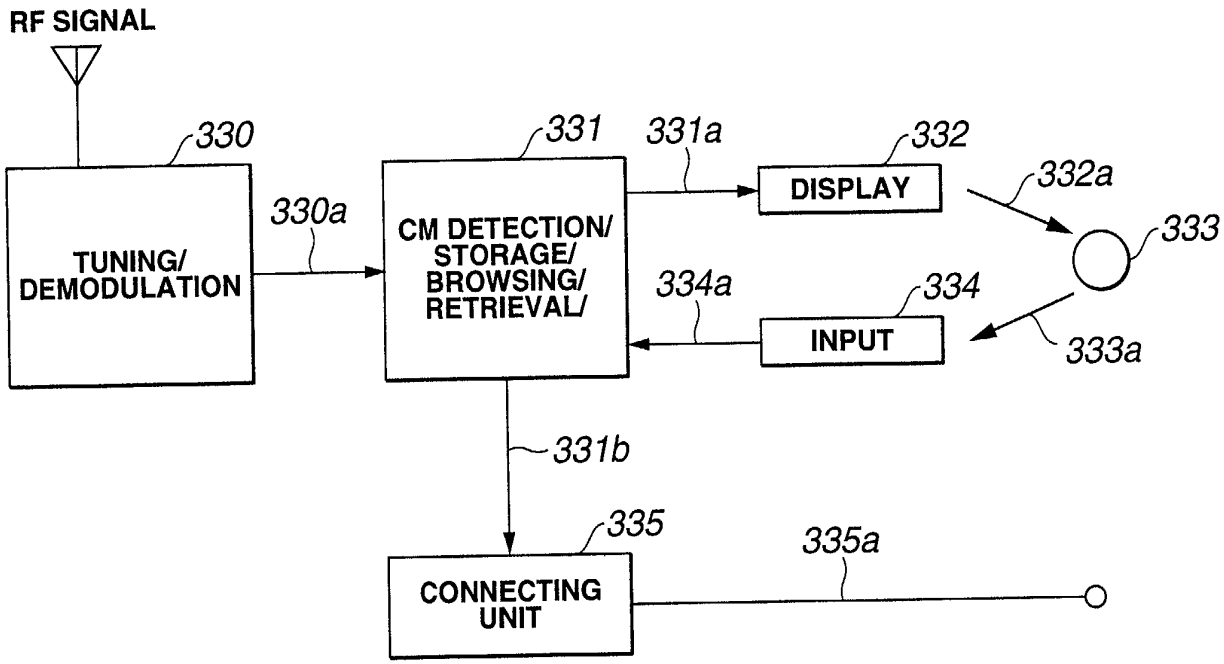

RF SIGNAL
330
TUNING/
DEMODULATION
330a
331
CM DETECTION/
STORAGE/
BROWSING/
RETRIEVAL/
331a
DISPLAY
332
332a
333
333a
INPUT
334
334a
331b
335
CONNECTING
UNIT
335a

FIG.4

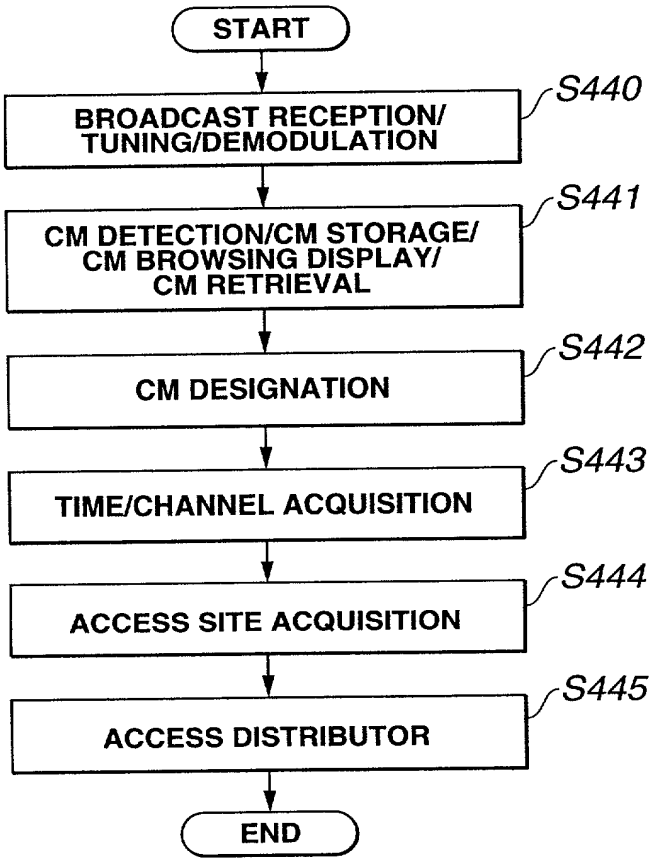

START
BROADCAST RECEPTION/ TUNING/DEMODULATION
S440
CM DETECTION/CM STORAGE/ CM BROWSING DISPLAY/ CM RETRIEVAL
S441
CM DESIGNATION
S442
TIME/CHANNEL ACQUISITION
S443
ACCESS SITE ACQUISITION
S444
ACCESS DISTRIBUTOR
S445
END

FIG.5

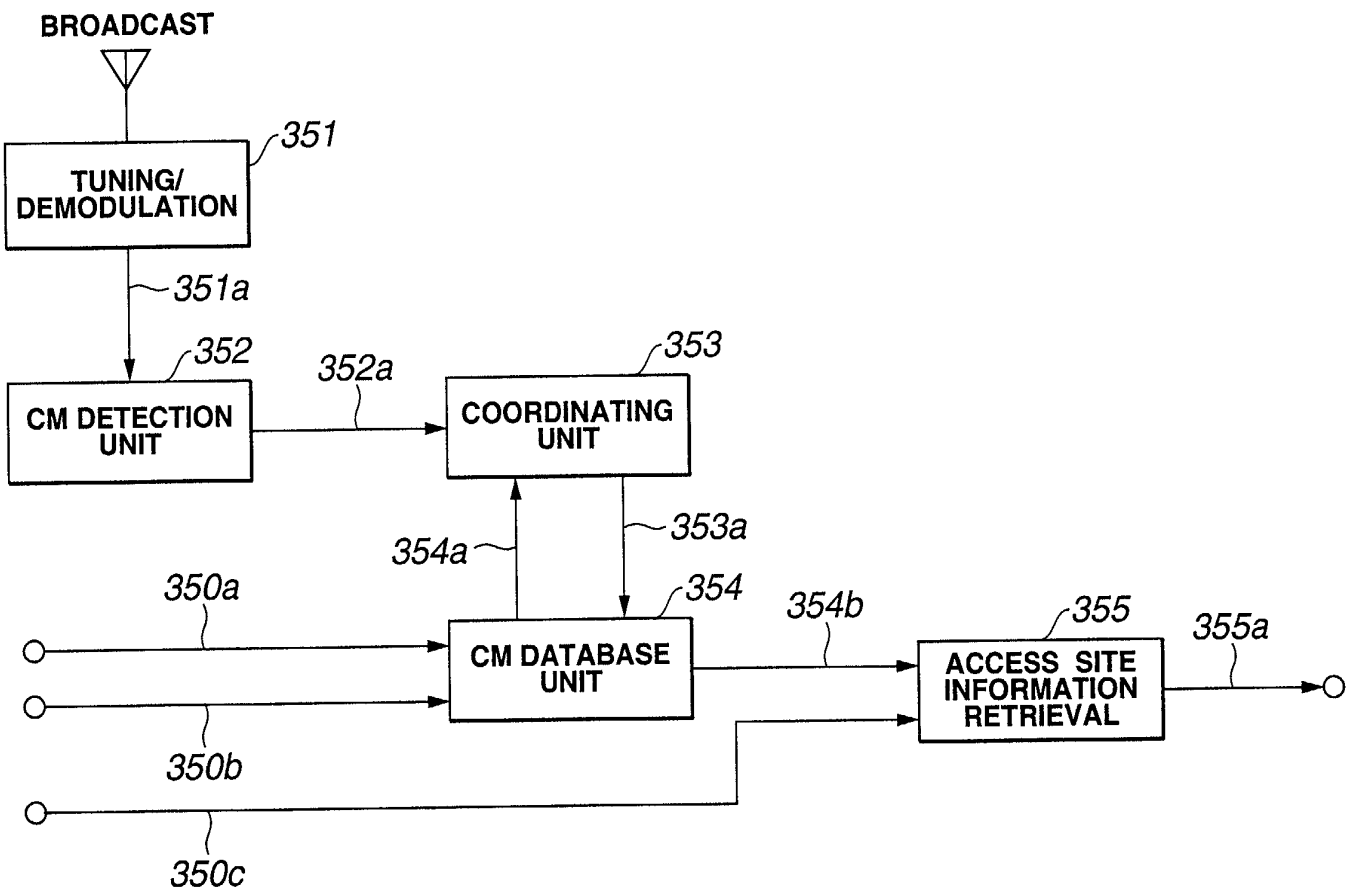

BROADCAST
351
TUNING/ DEMODULATION
351a
352
352a
353
CM DETECTION UNIT
COORDINATING UNIT
353a
354a
350a
354
354b
355
355a
CM DATABASE UNIT
ACCESS SITE INFORMATION RETRIEVAL
350b
350c

FIG.6

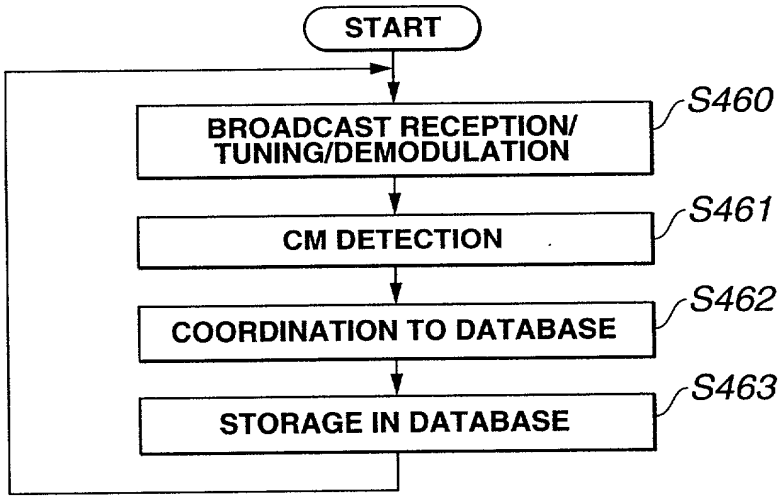

START
BROADCAST RECEPTION/ TUNING/DEMODULATION
S460
CM DETECTION
S461
COORDINATION TO DATABASE
S462
STORAGE IN DATABASE
S463

FIG.7

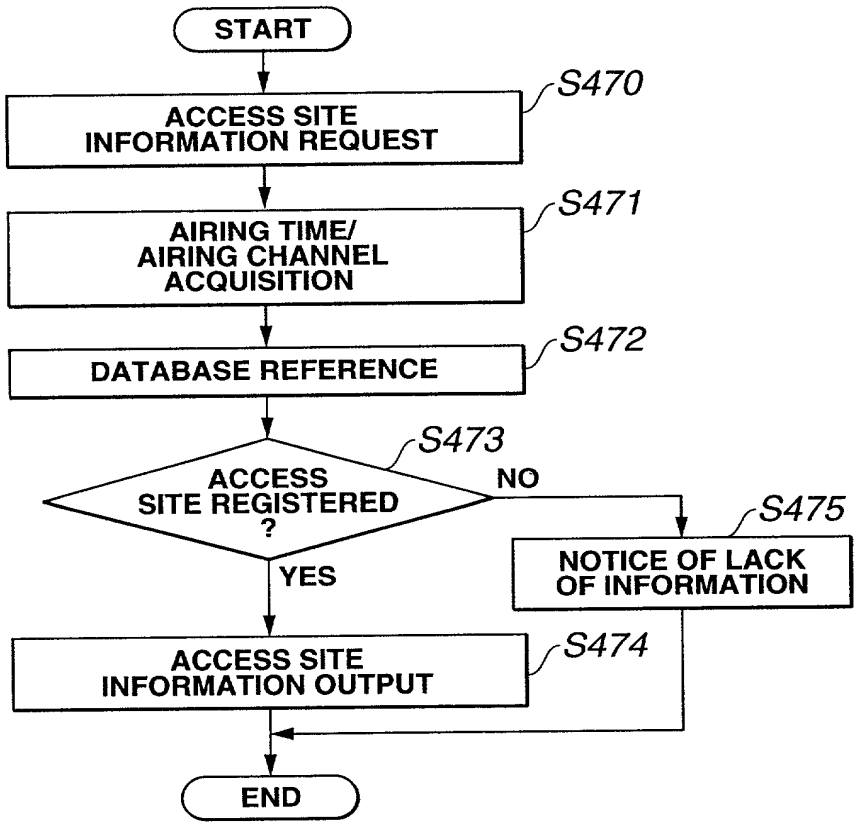

START
ACCESS SITE INFORMATION REQUEST
S470
AIRING TIME/ AIRING CHANNEL ACQUISITION
S471
DATABASE REFERENCE
S472
ACCESS SITE REGISTERED ?
S473
NO
YES
NOTICE OF LACK OF INFORMATION
S475
ACCESS SITE INFORMATION OUTPUT
S474
END

FIG.8

JP 2002-290860 A

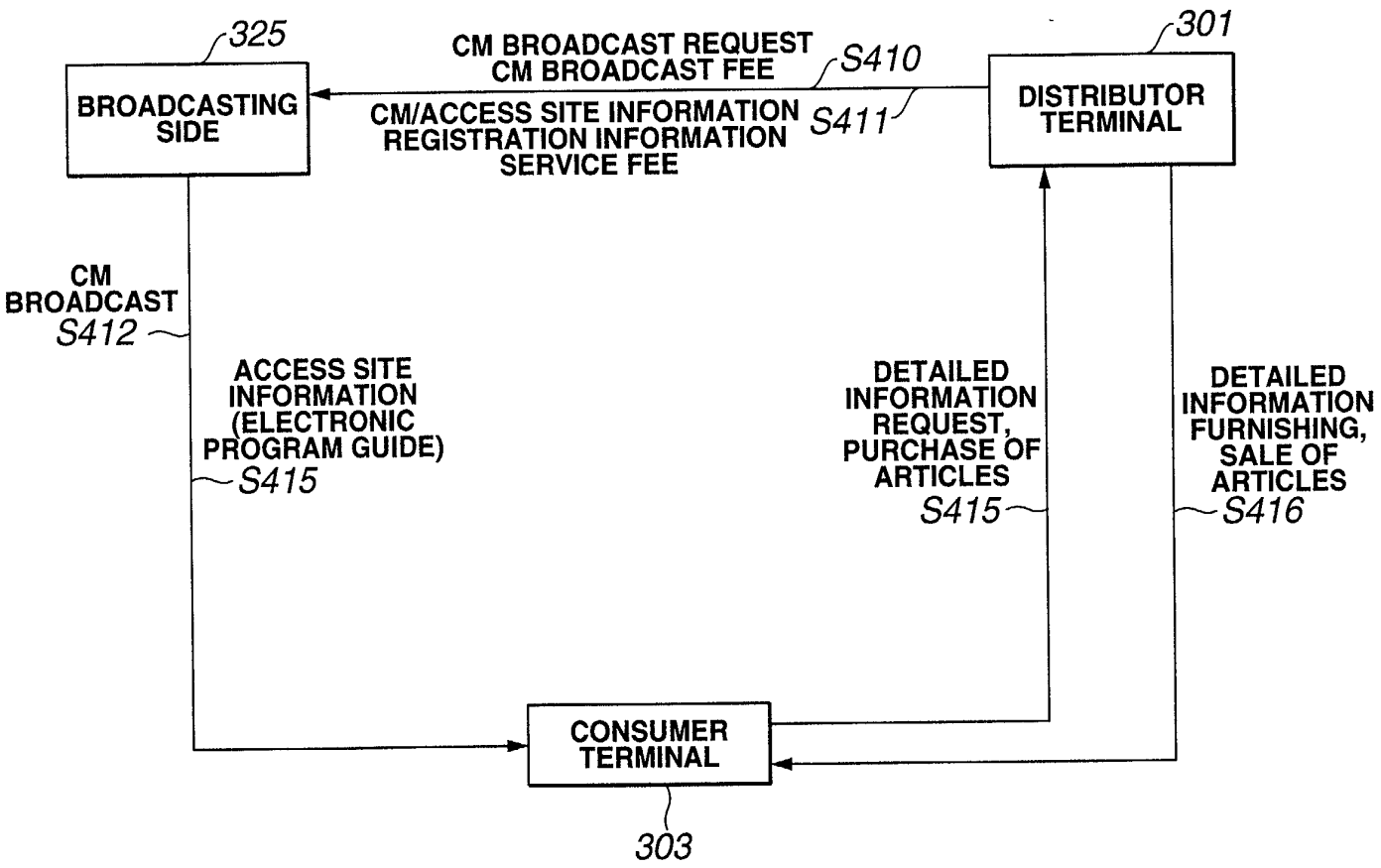


FIG.9

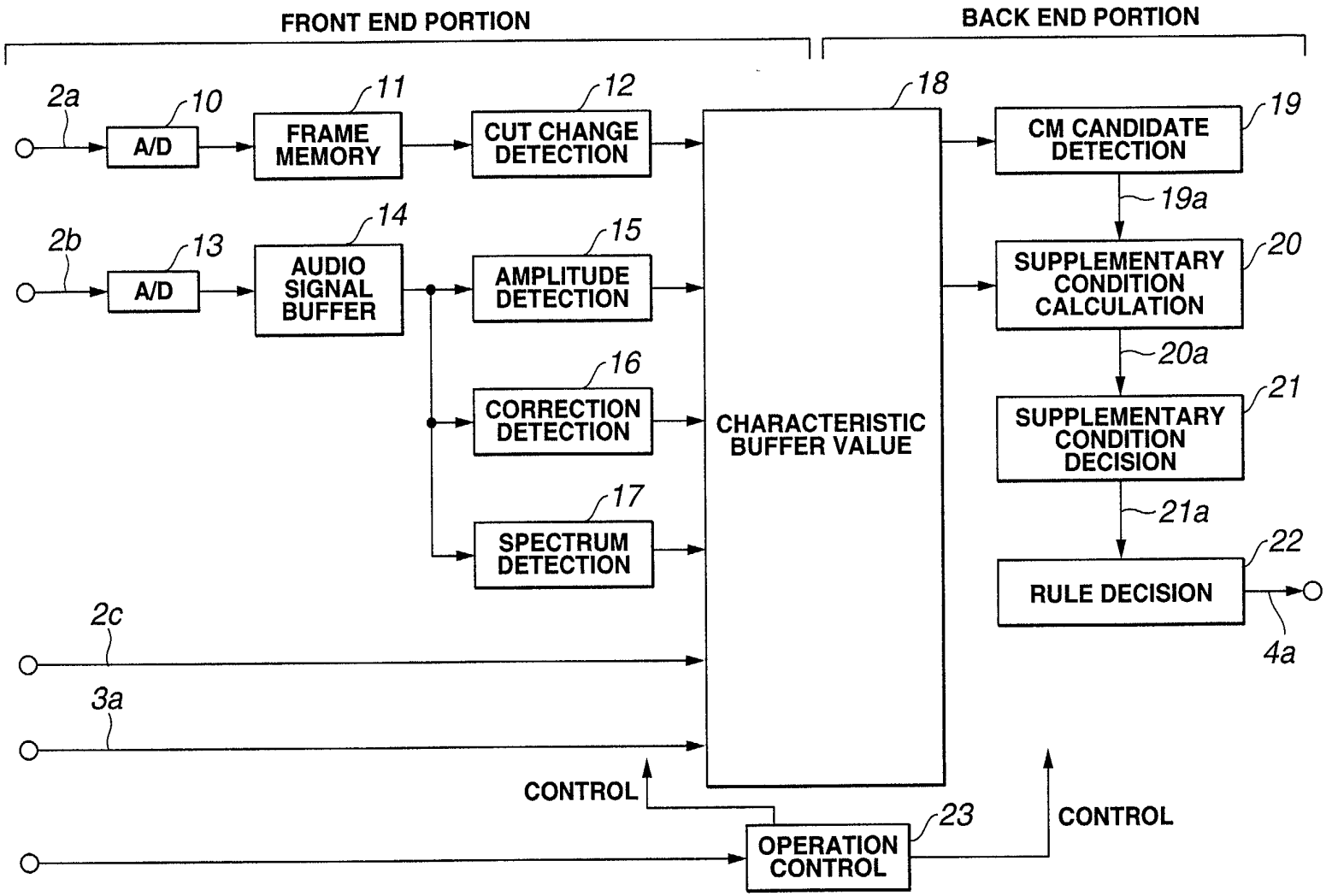

FRONT END PORTION
BACK END PORTION
2a
10
A/D
11
FRAME MEMORY
12
CUT CHANGE DETECTION
18
CHARACTERISTIC BUFFER VALUE
19
CM CANDIDATE DETECTION
19a
2b
13
A/D
14
AUDIO SIGNAL BUFFER
15
AMPLITUDE DETECTION
20
SUPPLEMENTARY CONDITION CALCULATION
20a
16
CORRECTION DETECTION
21
SUPPLEMENTARY CONDITION DECISION
21a
17
SPECTRUM DETECTION
22
RULE DECISION
4a
2c
3a
CONTROL
23
OPERATION CONTROL
CONTROL

FIG.10

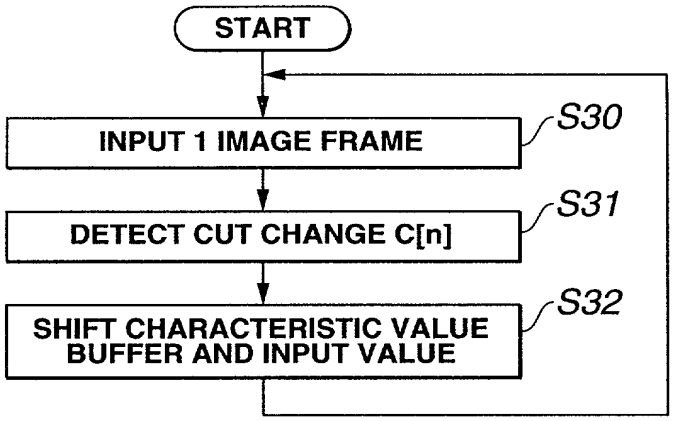

START
INPUT 1 IMAGE FRAME
S30
DETECT CUT CHANGE C[n]
S31
SHIFT CHARACTERISTIC VALUE BUFFER AND INPUT VALUE
S32

FIG.11

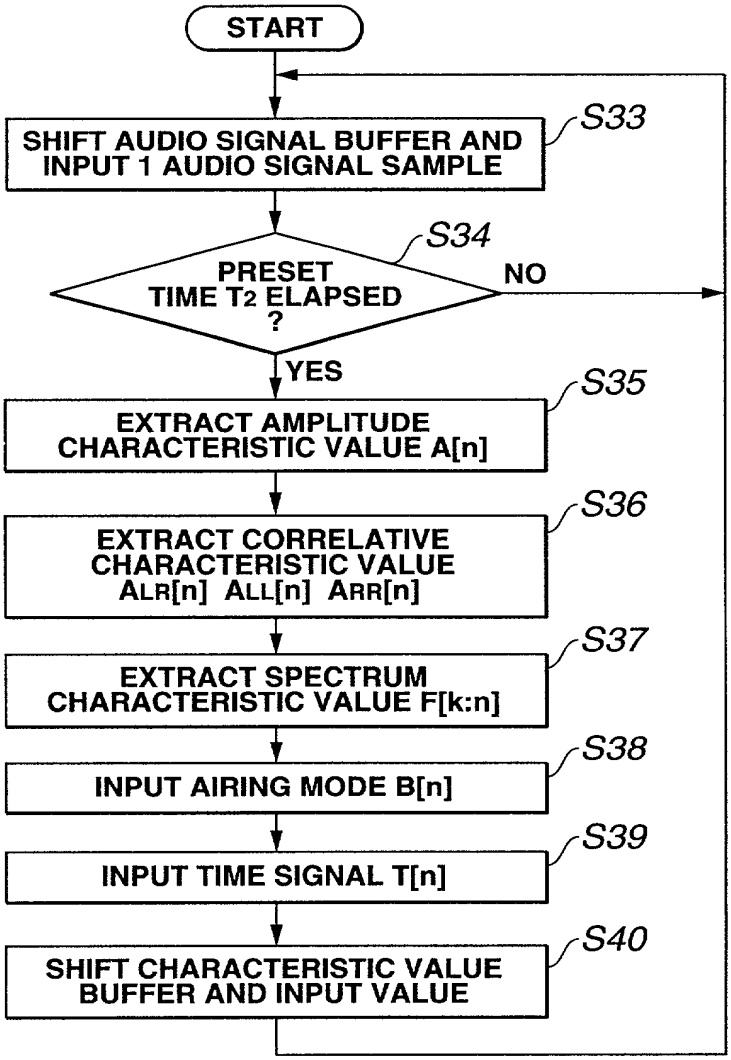

START
SHIFT AUDIO SIGNAL BUFFER AND INPUT 1 AUDIO SIGNAL SAMPLE
S33
PRESET TIME T2 ELAPSED ?
S34
NO
YES
EXTRACT AMPLITUDE CHARACTERISTIC VALUE A[n]
S35
EXTRACT CORRELATIVE CHARACTERISTIC VALUE ALR[n] ALL[n] ARR[n]
S36
EXTRACT SPECTRUM CHARACTERISTIC VALUE F[k:n]
S37
INPUT AIRING MODE B[n]
S38
INPUT TIME SIGNAL T[n]
S39
SHIFT CHARACTERISTIC VALUE BUFFER AND INPUT VALUE
S40

FIG.12

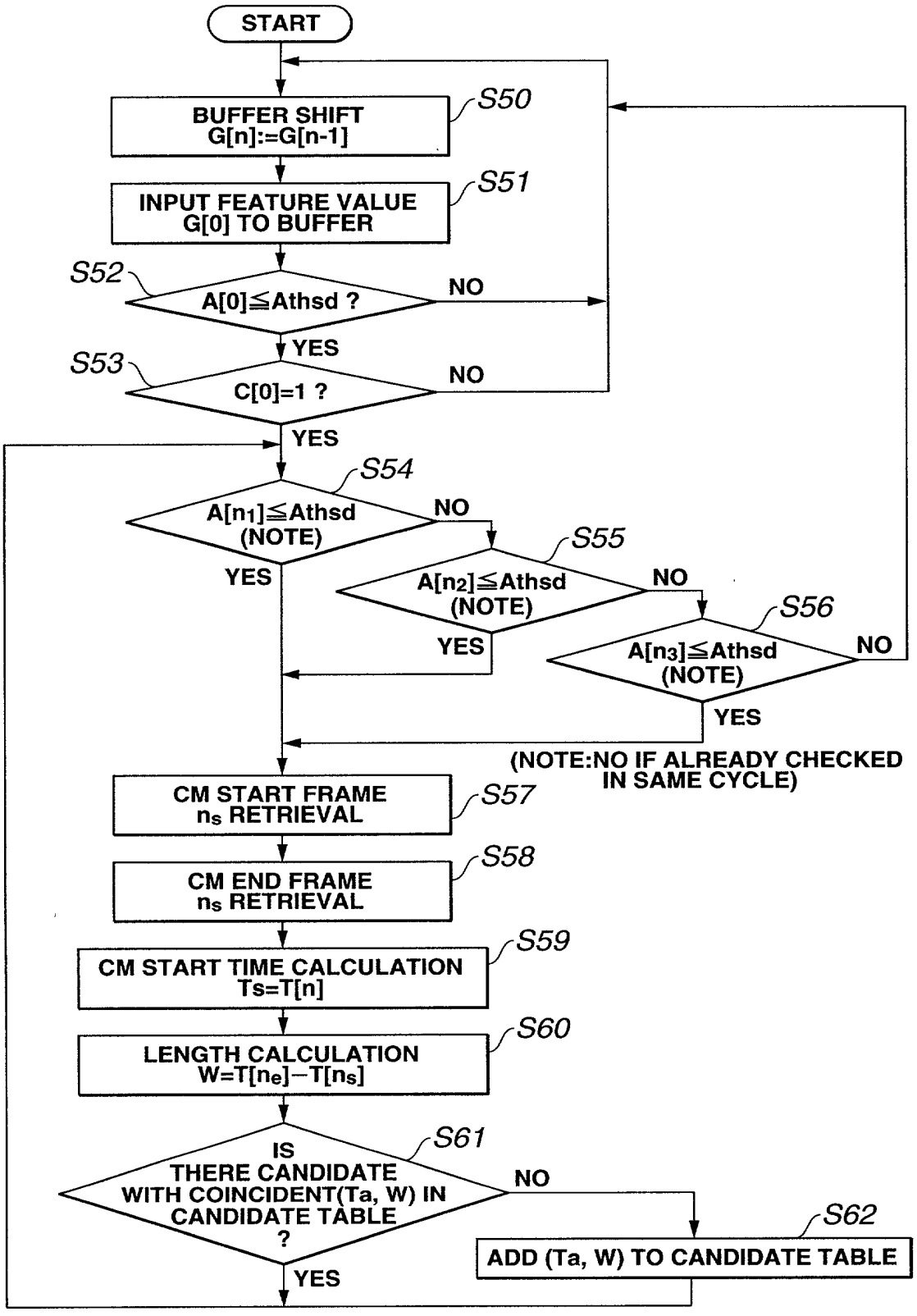

START
BUFFER SHIFT
G[n]:=G[n-1]
S50
INPUT FEATURE VALUE
G[0] TO BUFFER
S51
S52
A[0]≦Athsd ?
NO
YES
S53
C[0]=1 ?
NO
YES
S54
A[n1]≦Athsd
(NOTE)
NO
YES
S55
A[n2]≦Athsd
(NOTE)
NO
YES
S56
A[n3]≦Athsd
(NOTE)
NO
YES
(NOTE:NO IF ALREADY CHECKED
IN SAME CYCLE)
CM START FRAME
ns RETRIEVAL
S57
CM END FRAME
ns RETRIEVAL
S58
CM START TIME CALCULATION
Ts=T[n]
S59
LENGTH CALCULATION
W=T[ne]−T[ns]
S60
IS
THERE CANDIDATE
WITH COINCIDENT(Ta, W) IN
CANDIDATE TABLE
?
S61
NO
YES
ADD (Ta, W) TO CANDIDATE TABLE
S62

FIG.13

EP 2 262 290 A1

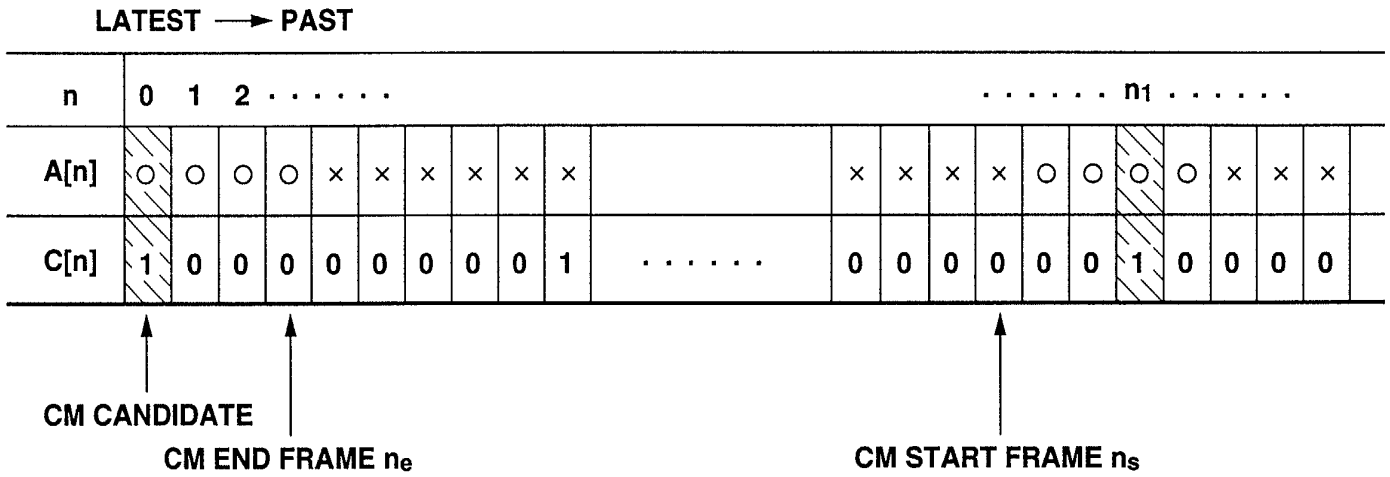


FIG.14

ITEM	SYMBOL	UNIT	EXAMPLE OF INDISPENSABLE CONDITION (19a)	EXAMPLE OF SUPPLEMENTARY CONDITIONS (20a)	EXAMPLE OF DECISION (21a)
START TIME	Ts	HOUR, MINUTES, SEC	1:23'45	1:23'45	1:23'45
LENGTH (SOUND LENGTH)	Tw	SEC	14.63	14.63	14.63
FORE BREAK LENGTH	Q_1	ms	-	300.0	300.0
BACK BREAK LENGTH	Q_2	ms	-	300.0	300.0
FORE BREAK MIN AMPLITUDE	Q_3	NOTE	-	0.00015	0.00015
BACK BREAK MIN AMPLITUDE	Q_4	NOTE	-	0.00020	0.00020
LEFT/RIGHT CORRELATION	Q_5	-	-	0.934	0.934
AVERAGE AMPLITUDE	Q_6	NOTE	-	0.010	0.010
NUMBER OF CUTS	Q_7	NUMBER	-	9	9
AIRING MODE	Q_8	-	-	1	1
NUMBER OF NEIGHBOURING CANDIDATES	Q_9	NUMBER	-	2	2
FORE SPECTRUM DIFFERENCE ENERGY	Q_{10}	-	-	0.41	0.41
BACK SPECTRUM DIFFERENCE ENERGY	Q_{11}	-	-	0.63	0.63
SCORE	R	-	-	-	1.80
SCORE DECISION RESULT	Z	-	-	-	1

NOTE : AMPLITUDE VALUE OF AUDIO SIGNAL IS INDICATED AS RATIO TO MAX AMPLITUDE

FIG.15

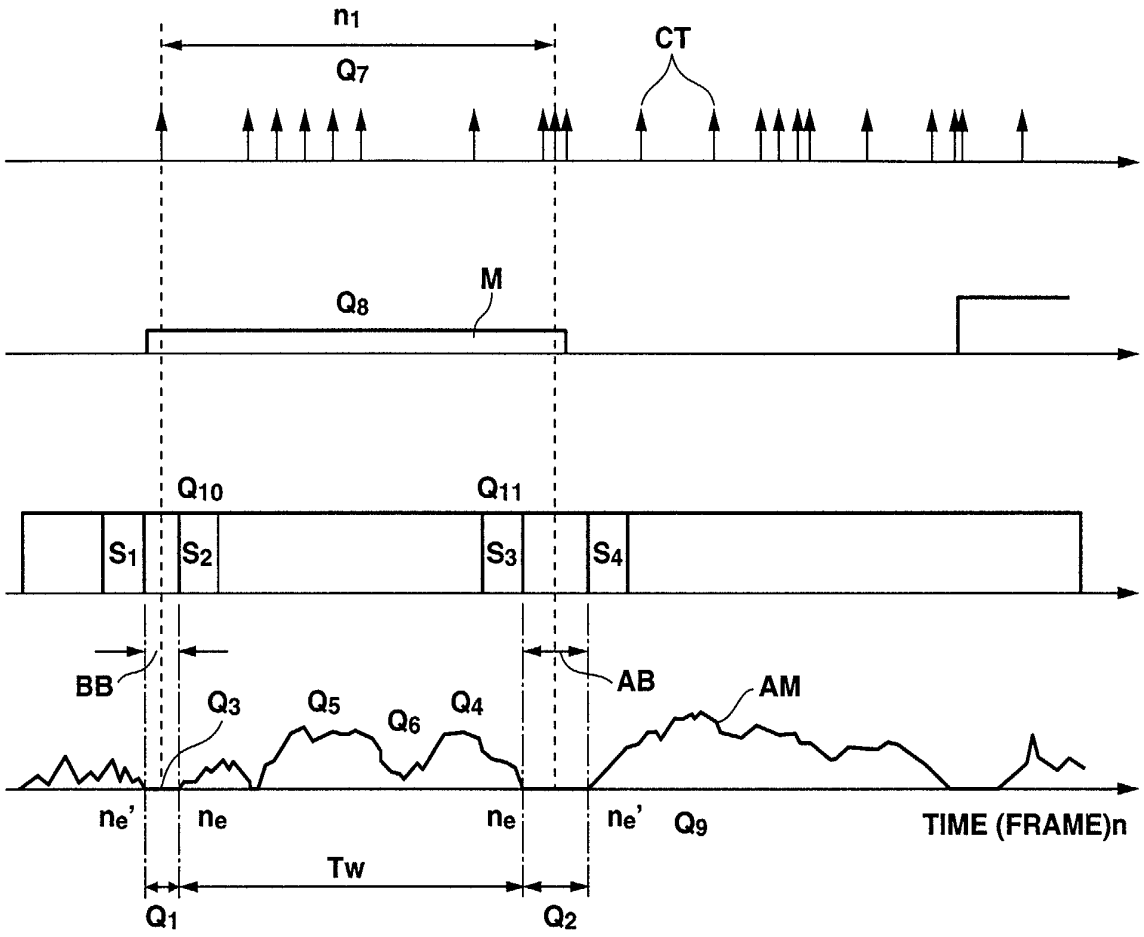
TO2250 T6428860

FIG.16A

FIG.16B

FIG.16C

FIG.16D



* USE $A_{LL}[n]$, $A_{RR}[n]$, $A_{LR}[n]$ FOR CALCULATING Q_5

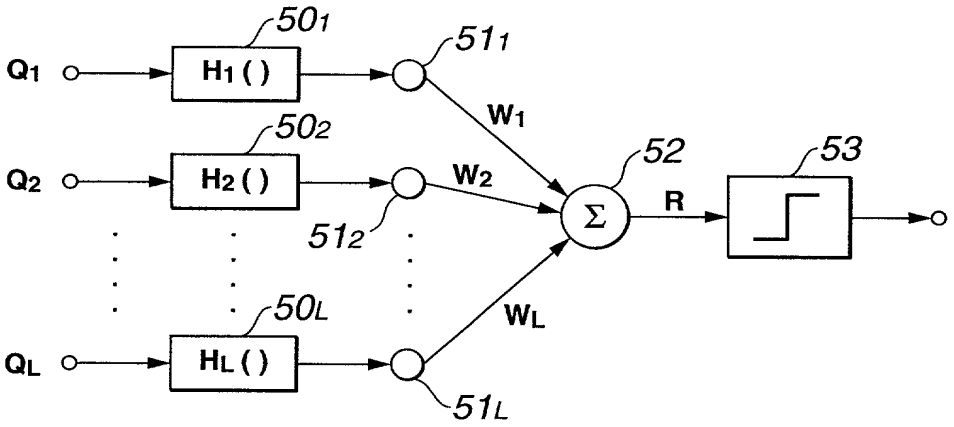


FIG.17

FIG.18A

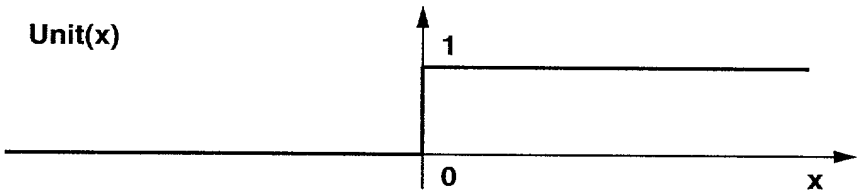


FIG.18B

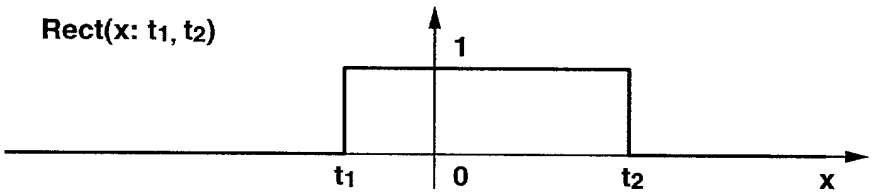
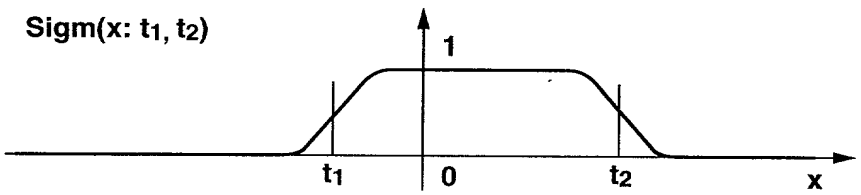


FIG.18C



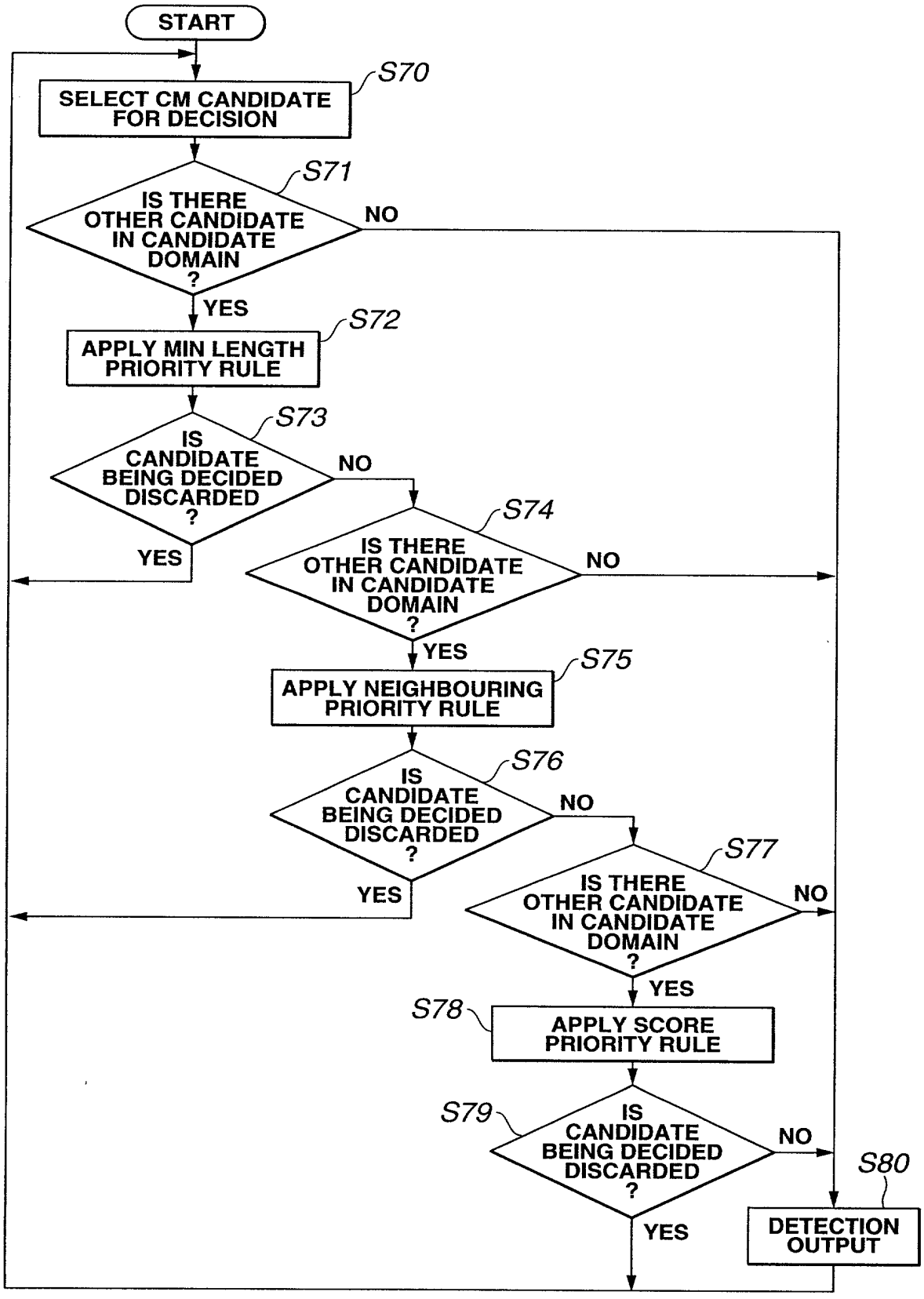

START
SELECT CM CANDIDATE FOR DECISION
S70
IS THERE OTHER CANDIDATE IN CANDIDATE DOMAIN ?
S71
NO
YES
APPLY MIN LENGTH PRIORITY RULE
S72
IS CANDIDATE BEING DECIDED DISCARDED ?
S73
NO
YES
IS THERE OTHER CANDIDATE IN CANDIDATE DOMAIN ?
S74
NO
YES
APPLY NEIGHBOURING PRIORITY RULE
S75
IS CANDIDATE BEING DECIDED DISCARDED ?
S76
NO
YES
IS THERE OTHER CANDIDATE IN CANDIDATE DOMAIN ?
S77
NO
YES
APPLY SCORE PRIORITY RULE
S78
IS CANDIDATE BEING DECIDED DISCARDED ?
S79
NO
YES
DETECTION OUTPUT
S80

FIG.19

EP 0 722 590 B1

FIG.20A

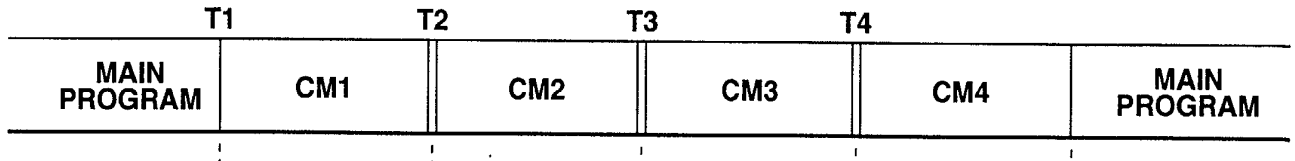
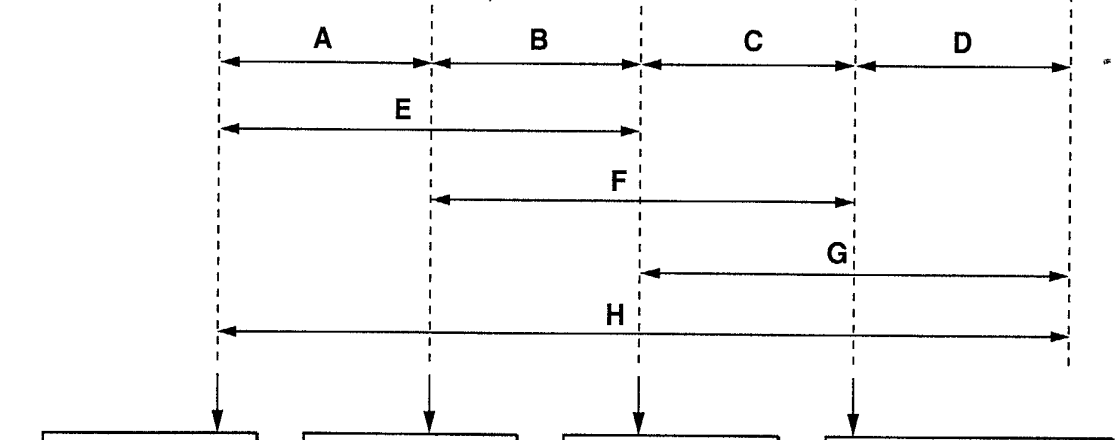


FIG.20B



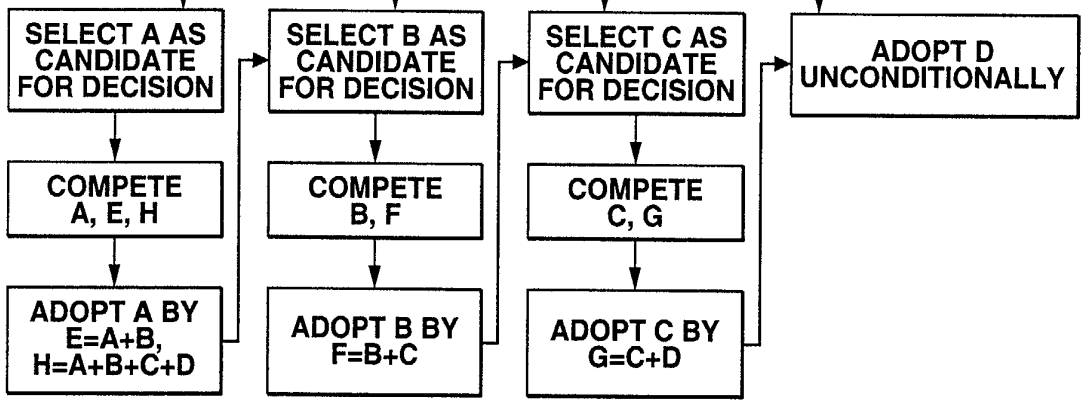


FIG.20C FIG.20D FIG.20E FIG.20F

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FIG.21A

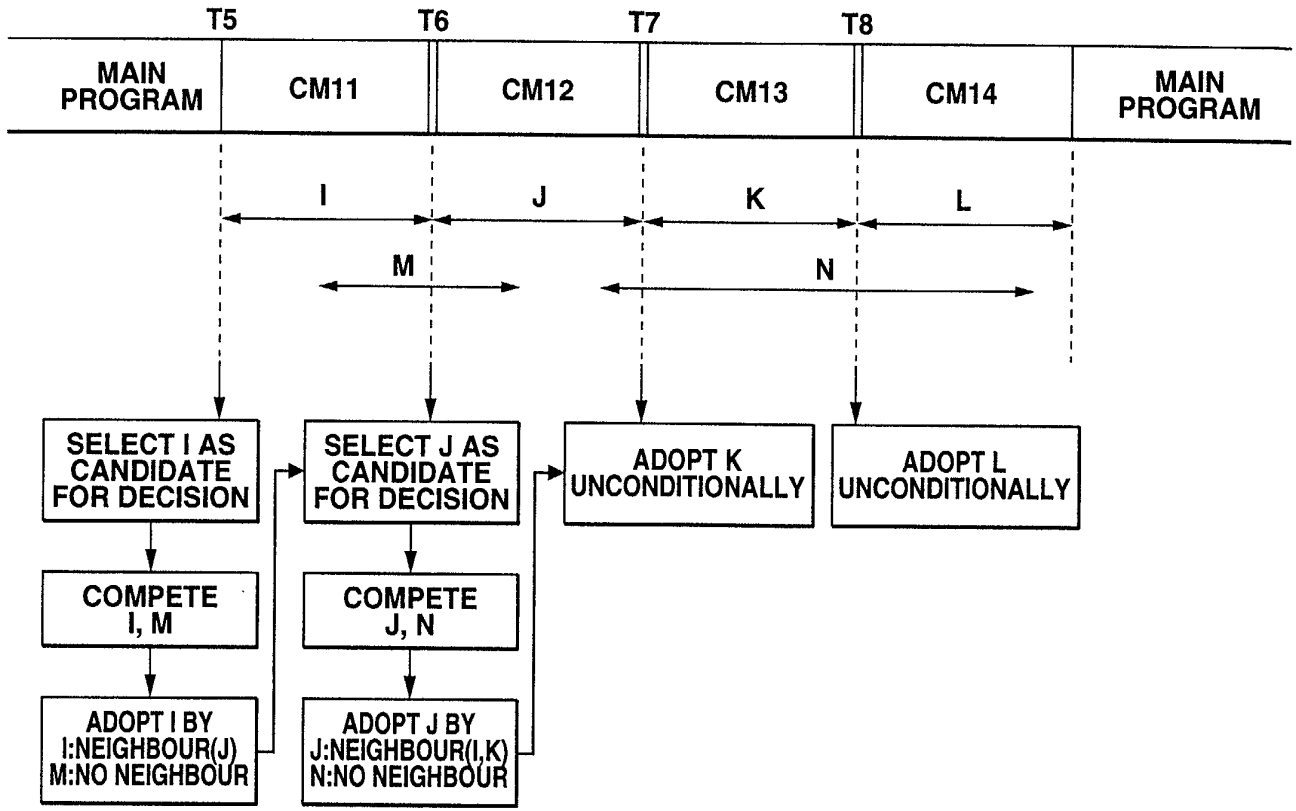


FIG.21B

FIG.21C FIG.21D FIG.21E FIG.21F

EP 02290 "Test 3860

FIG.22A

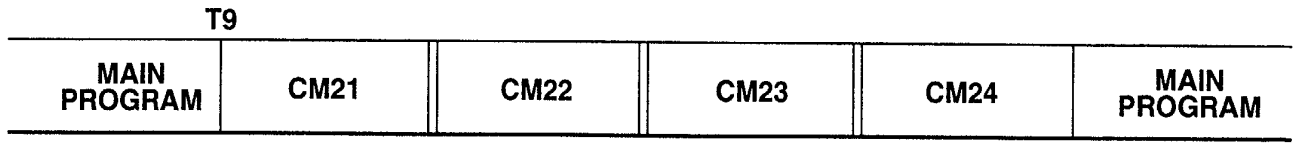


FIG.22B

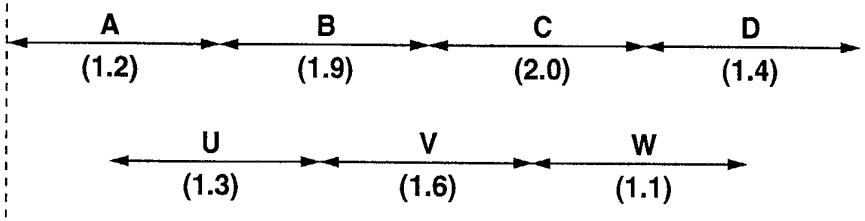


FIG.22C

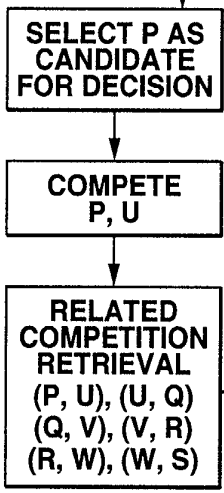


FIG.22D

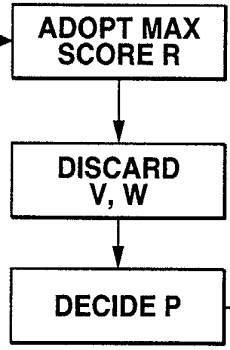


FIG.22E

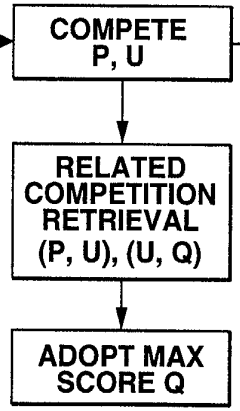
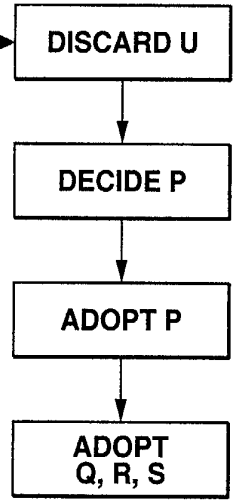


FIG.22F



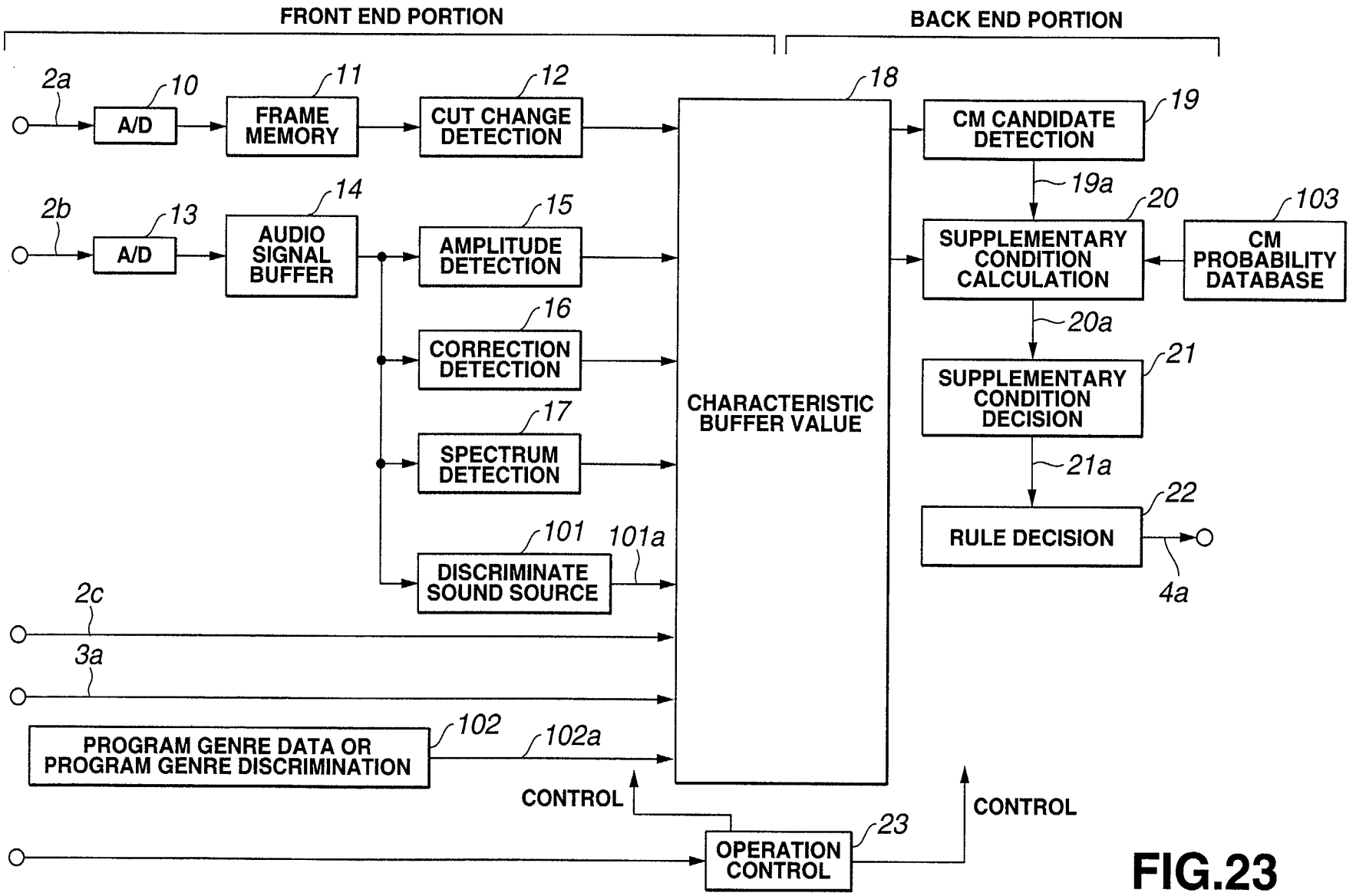

FRONT END PORTION
BACK END PORTION
2a
10
A/D
11
FRAME MEMORY
12
CUT CHANGE DETECTION
18
CHARACTERISTIC BUFFER VALUE
19
CM CANDIDATE DETECTION
19a
20
SUPPLEMENTARY CONDITION CALCULATION
103
CM PROBABILITY DATABASE
20a
21
SUPPLEMENTARY CONDITION DECISION
21a
22
RULE DECISION
4a
2b
13
A/D
14
AUDIO SIGNAL BUFFER
15
AMPLITUDE DETECTION
16
CORRECTION DETECTION
17
SPECTRUM DETECTION
101
101a
DISCRIMINATE SOUND SOURCE
2c
3a
PROGRAM GENRE DATA OR PROGRAM GENRE DISCRIMINATION
102
102a
CONTROL
CONTROL
23
OPERATION CONTROL

FIG.23

ITEM	SYMBOL	UNIT	EXAMPLE OF INDISPENSABLE CONDITION (19a)	EXAMPLE OF SUPPLEMENTARY CONDITIONS (20a)	EXAMPLE OF DECISION (21a)
POSSIBLE PRESENCE OF SPEECH	Q_{12}	-	-	1	1
POSSIBLE PRESENCE OF MUSIC	Q_{13}	-	-	1	1
TIME ZONE POSSIBILITY	Q_{14}	-	-	0.15	0.15
PROGRAM GENRE PROBABILITY	Q_{15}	-	-	0.1	0.1

FIG.24

JP02290 "Tsh/BB60

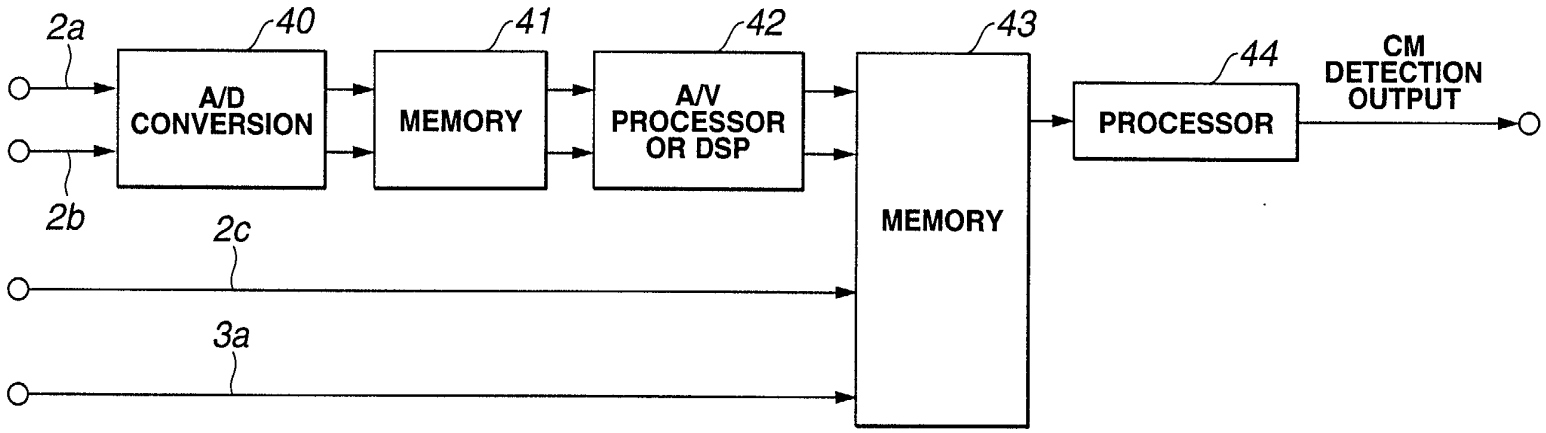


FIG.25

JP02290 '04

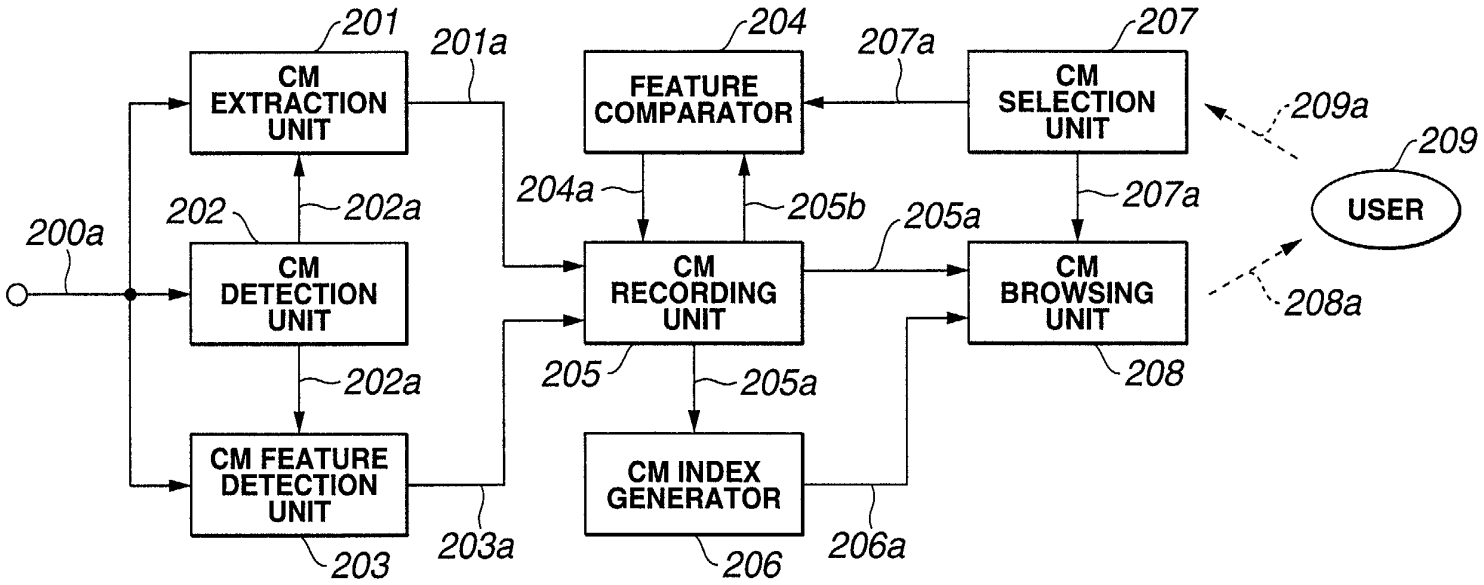


FIG.26

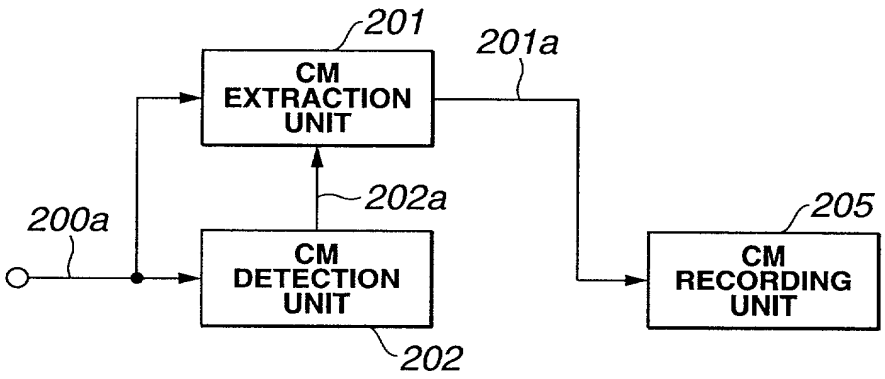

201
CM EXTRACTION UNIT
201a
202a
200a
CM DETECTION UNIT
205
CM RECORDING UNIT
202

FIG.27

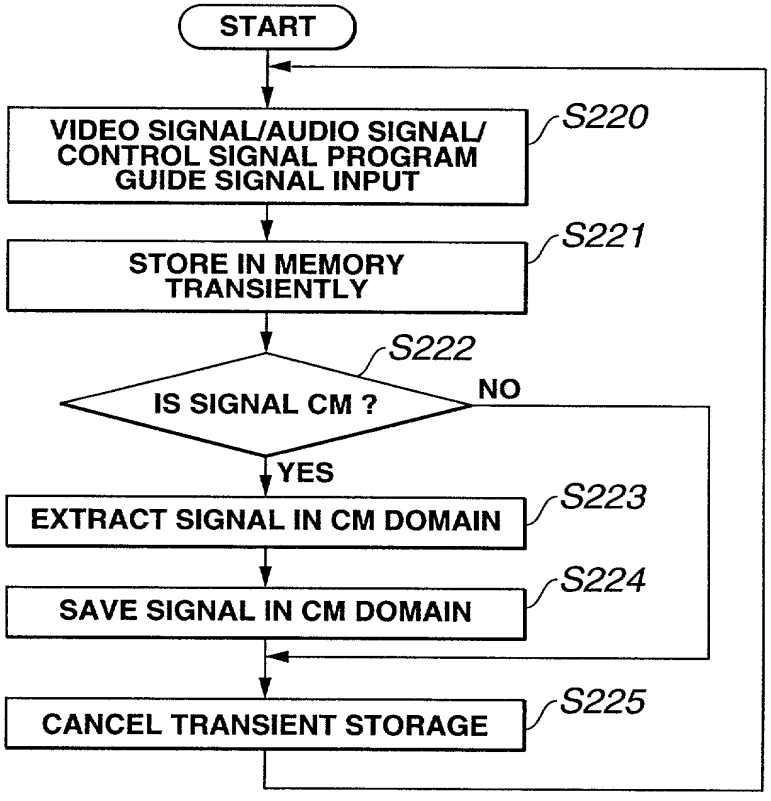

START
VIDEO SIGNAL/AUDIO SIGNAL/ CONTROL SIGNAL PROGRAM GUIDE SIGNAL INPUT
S220
STORE IN MEMORY TRANSIENTLY
S221
S222
IS SIGNAL CM ?
NO
YES
EXTRACT SIGNAL IN CM DOMAIN
S223
SAVE SIGNAL IN CM DOMAIN
S224
CANCEL TRANSIENT STORAGE
S225

FIG.28

FIG.29A

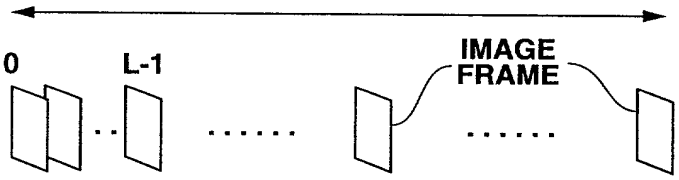


FIG.29B

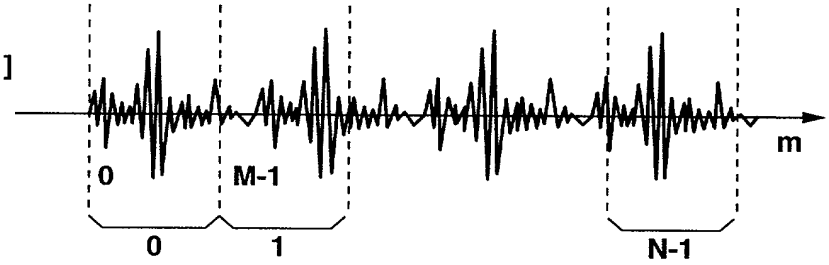


FIG.29C

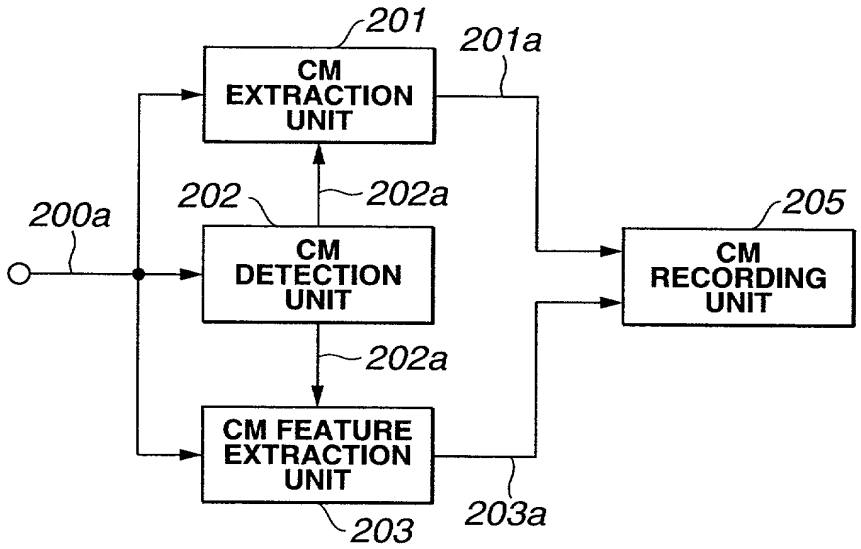


FIG.30

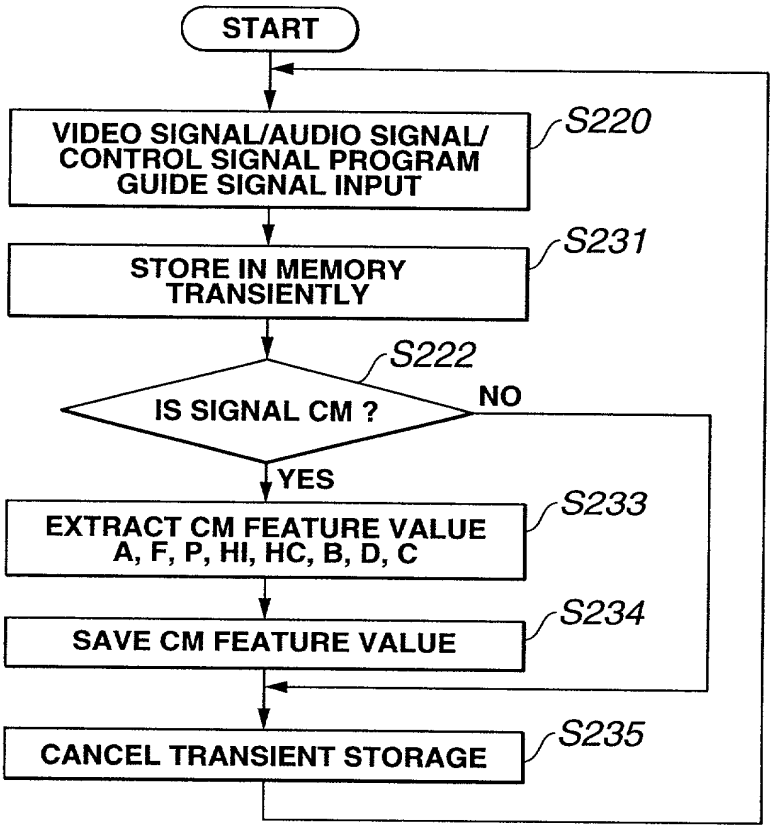

START
VIDEO SIGNAL/AUDIO SIGNAL/ CONTROL SIGNAL PROGRAM GUIDE SIGNAL INPUT
S220
STORE IN MEMORY TRANSIENTLY
S231
S222
IS SIGNAL CM ?
NO
YES
EXTRACT CM FEATURE VALUE A, F, P, HI, HC, B, D, C
S233
SAVE CM FEATURE VALUE
S234
CANCEL TRANSIENT STORAGE
S235

FIG.31

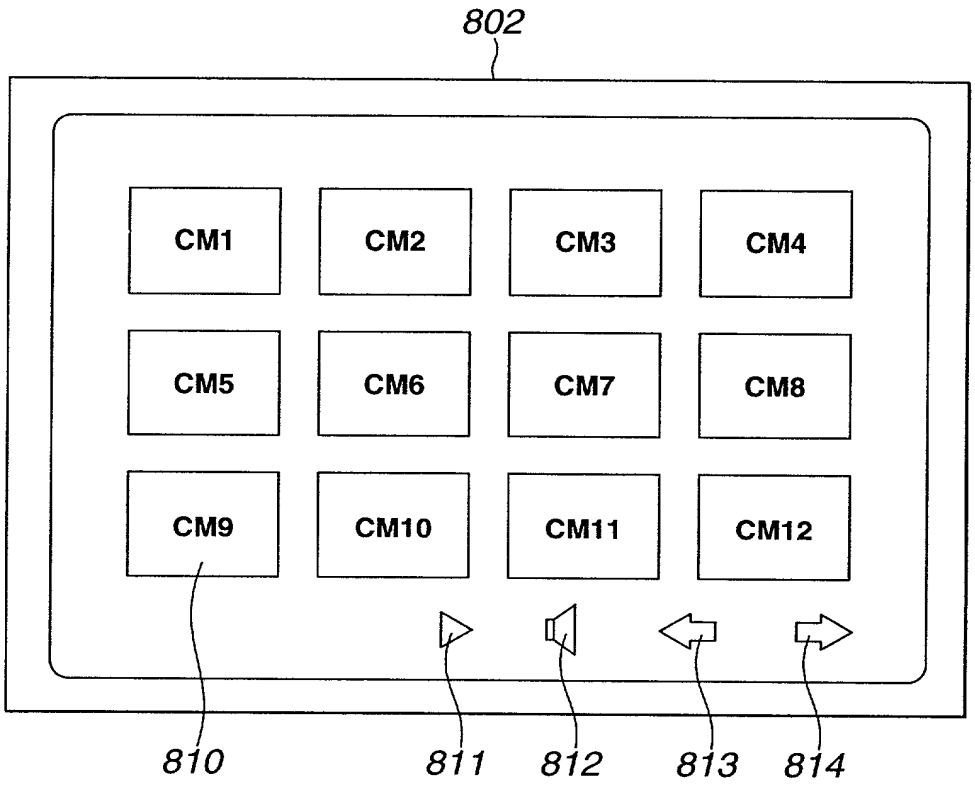

802
CM1
CM2
CM3
CM4
CM5
CM6
CM7
CM8
CM9
CM10
CM11
CM12
810
811
812
813
814

FIG.32

JP02250716A2880

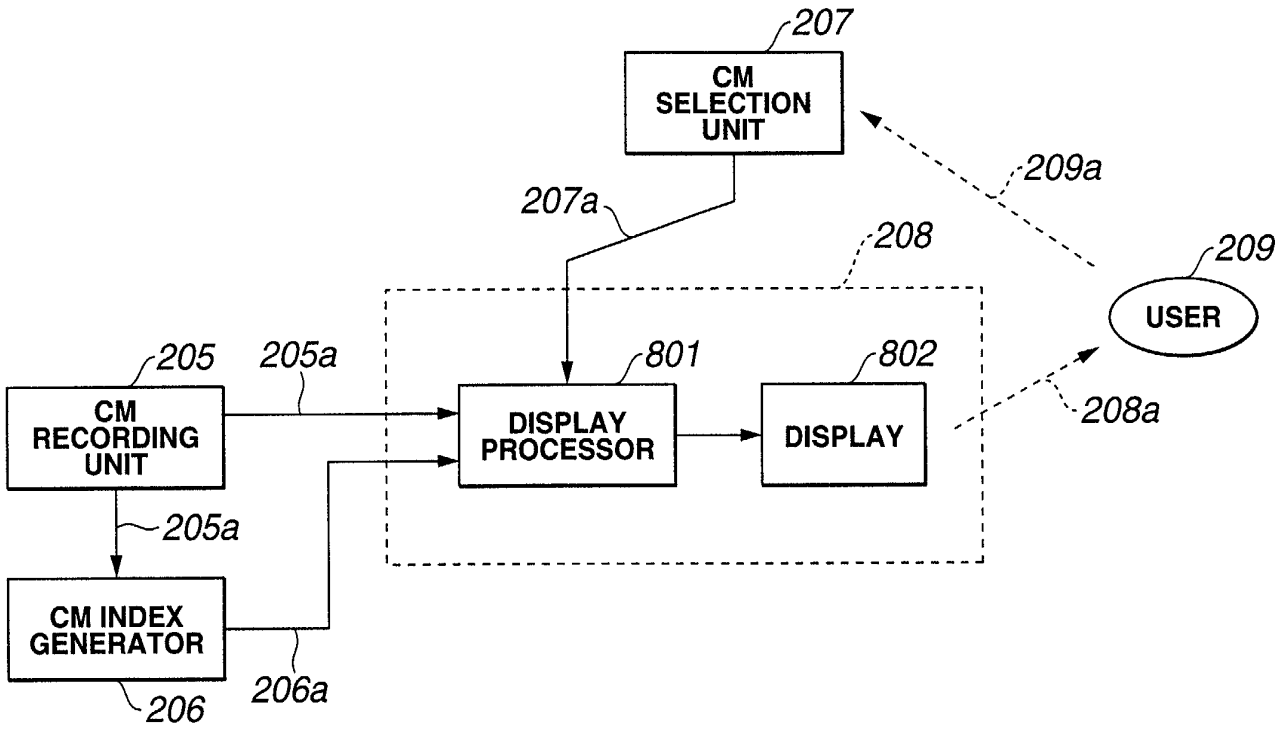


FIG.33

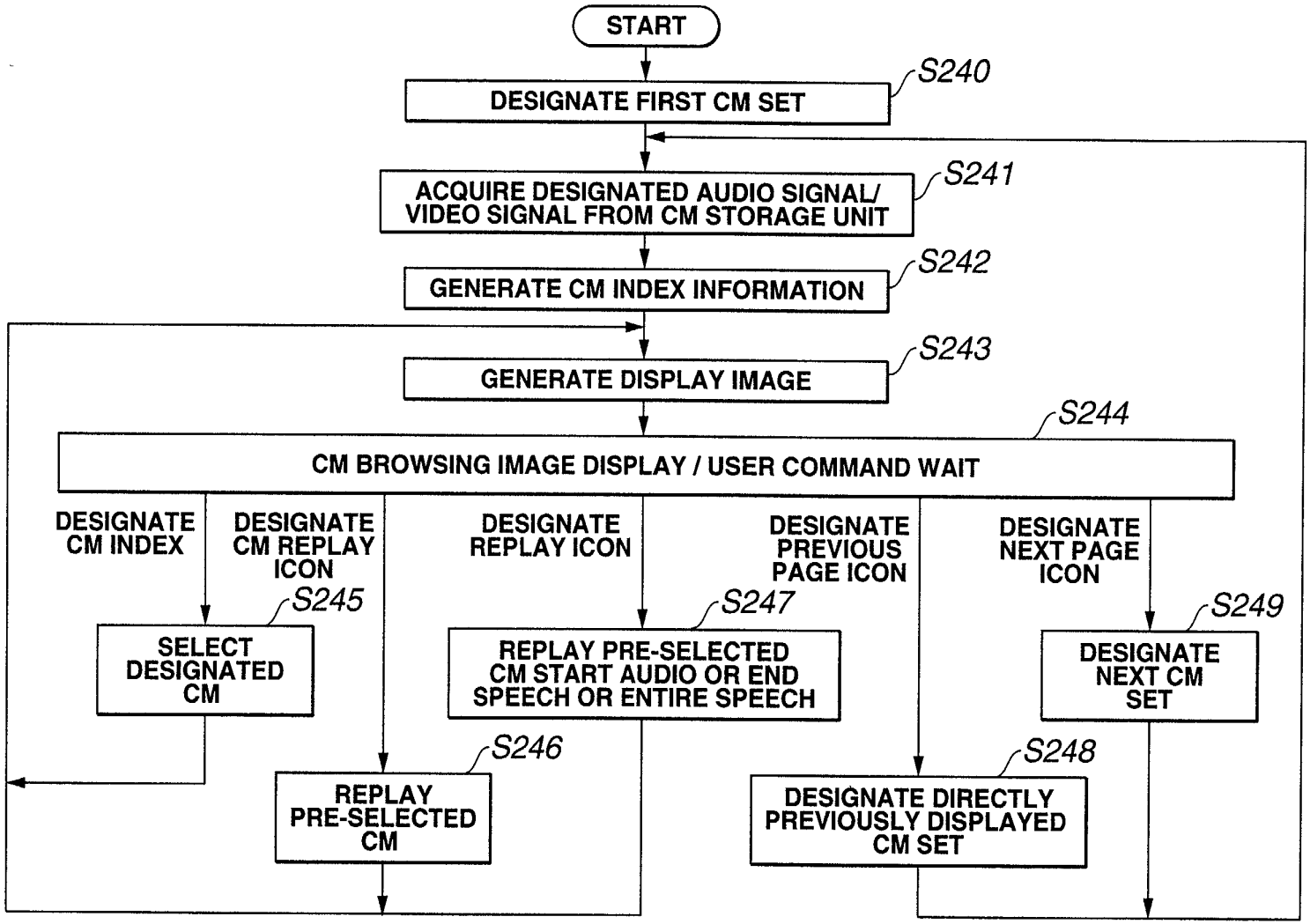

START
S240
DESIGNATE FIRST CM SET
S241
ACQUIRE DESIGNATED AUDIO SIGNAL/ VIDEO SIGNAL FROM CM STORAGE UNIT
S242
GENERATE CM INDEX INFORMATION
S243
GENERATE DISPLAY IMAGE
S244
CM BROWSING IMAGE DISPLAY / USER COMMAND WAIT
DESIGNATE CM INDEX
DESIGNATE CM REPLAY ICON
DESIGNATE REPLAY ICON
DESIGNATE PREVIOUS PAGE ICON
DESIGNATE NEXT PAGE ICON
S245
SELECT DESIGNATED CM
S247
REPLAY PRE-SELECTED CM START AUDIO OR END SPEECH OR ENTIRE SPEECH
S249
DESIGNATE NEXT CM SET
S246
REPLAY PRE-SELECTED CM
S248
DESIGNATE DIRECTLY PREVIOUSLY DISPLAYED CM SET

FIG.34

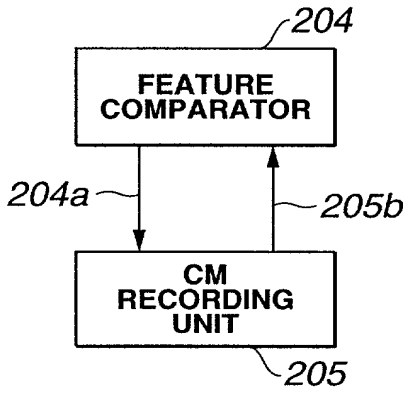

204
FEATURE COMPARATOR
204a
205b
CM RECORDING UNIT
205

FIG.35

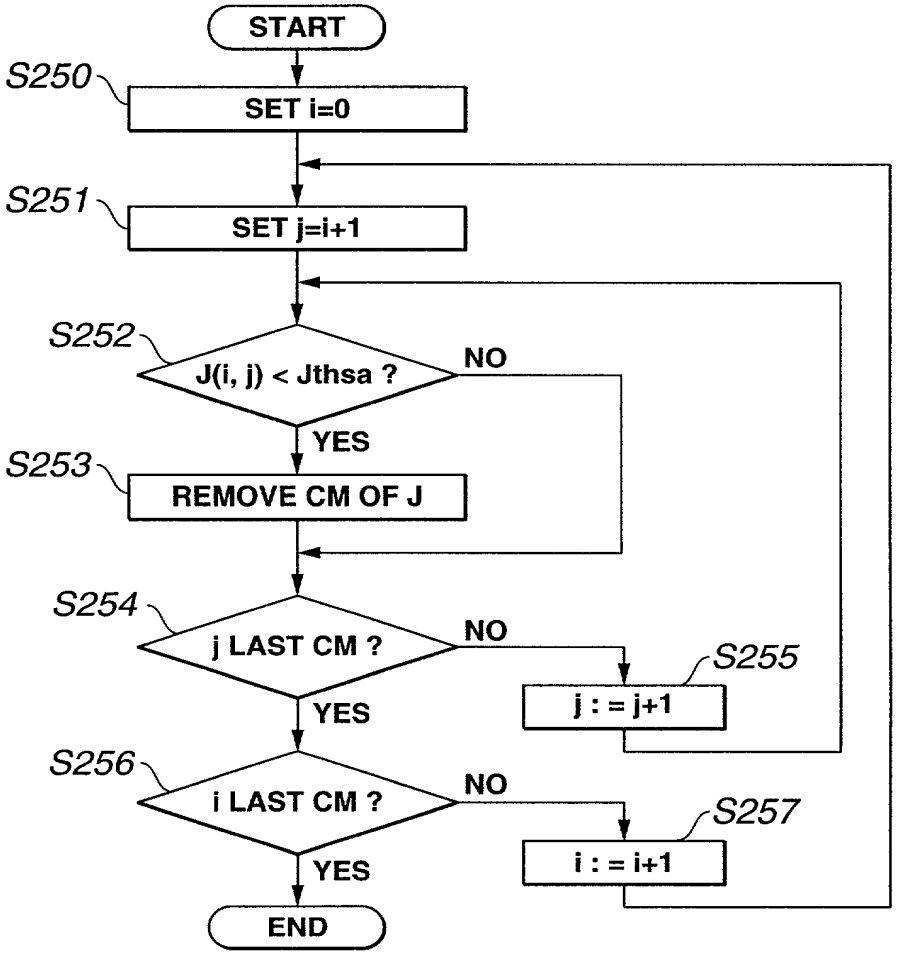

START
S250
SET i=0
S251
SET j=i+1
S252
J(i, j) < Jthsa ?
NO
YES
S253
REMOVE CM OF J
S254
j LAST CM ?
NO
S255
j : = j+1
YES
S256
i LAST CM ?
NO
S257
i : = i+1
YES
END

FIG.36

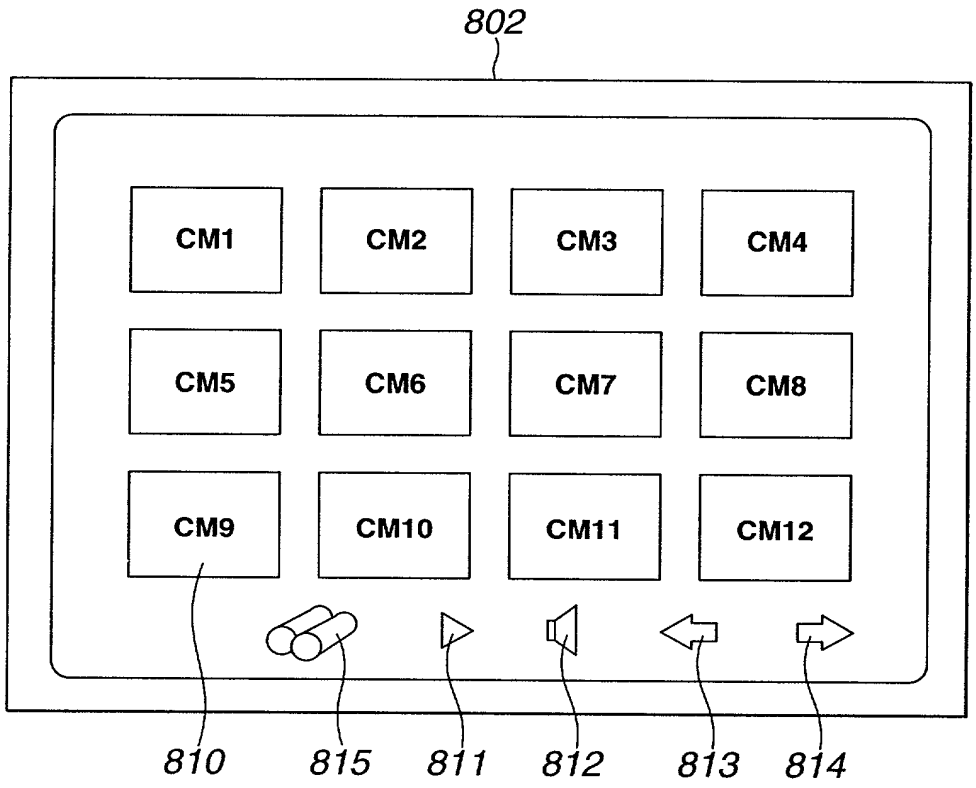

802
CM1
CM2
CM3
CM4
CM5
CM6
CM7
CM8
CM9
CM10
CM11
CM12
810
815
811
812
813
814

FIG.37

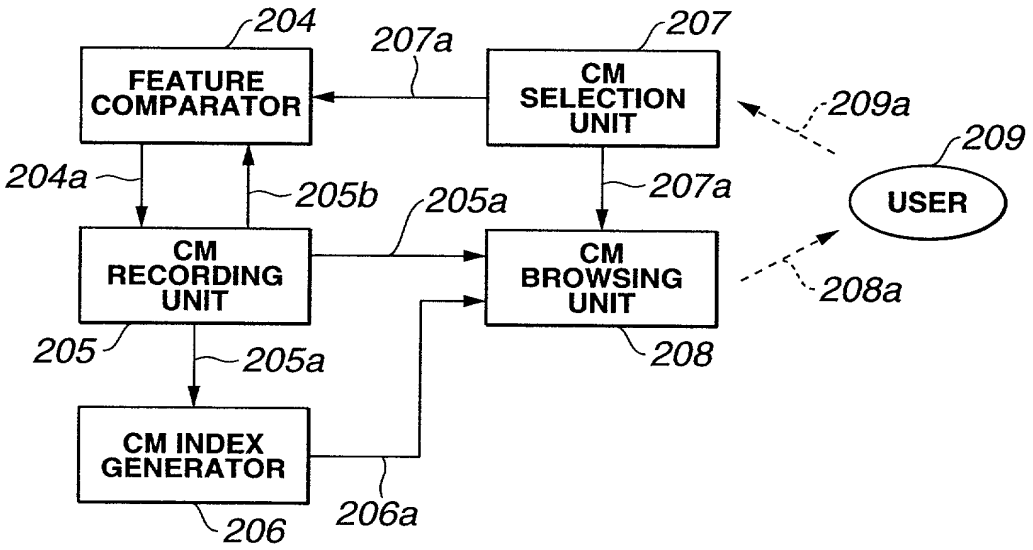

204
207a
207
FEATURE COMPARATOR
CM SELECTION UNIT
209a
209
USER
204a
205b
205a
207a
CM RECORDING UNIT
CM BROWSING UNIT
208a
205
205a
208
CM INDEX GENERATOR
206a
206

FIG.38

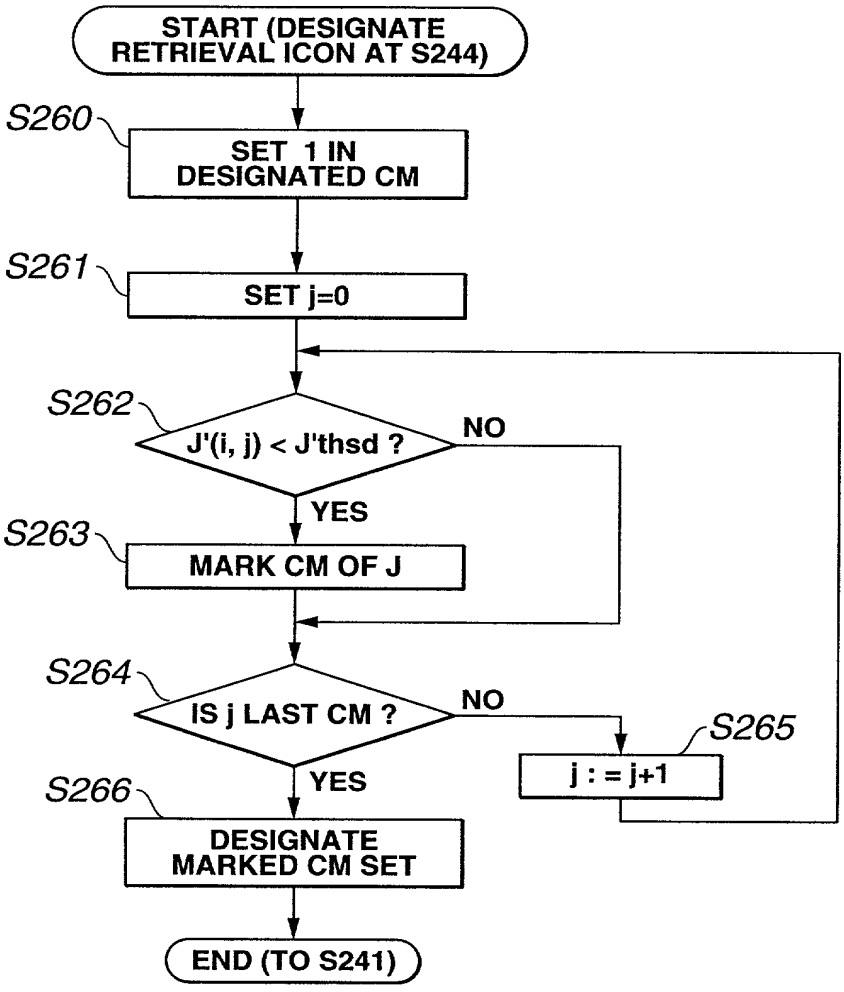

START (DESIGNATE RETRIEVAL ICON AT S244)
S260
SET 1 IN DESIGNATED CM
S261
SET j=0
S262
J'(i, j) < J'thsd ?
NO
YES
S263
MARK CM OF J
S264
IS j LAST CM ?
NO
S265
j : = j+1
YES
S266
DESIGNATE MARKED CM SET
END (TO S241)

FIG.39

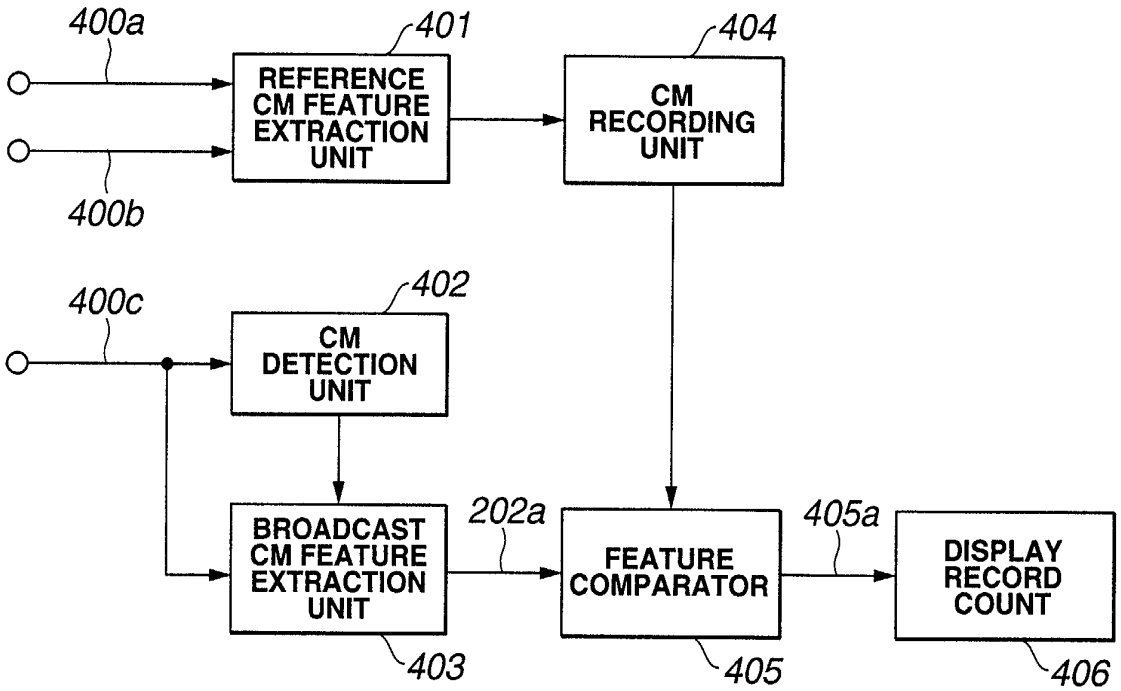

400a
401
404
REFERENCE CM FEATURE EXTRACTION UNIT
CM RECORDING UNIT
400b
400c
402
CM DETECTION UNIT
BROADCAST CM FEATURE EXTRACTION UNIT
202a
FEATURE COMPARATOR
405a
DISPLAY RECORD COUNT
403
405
406

FIG.40

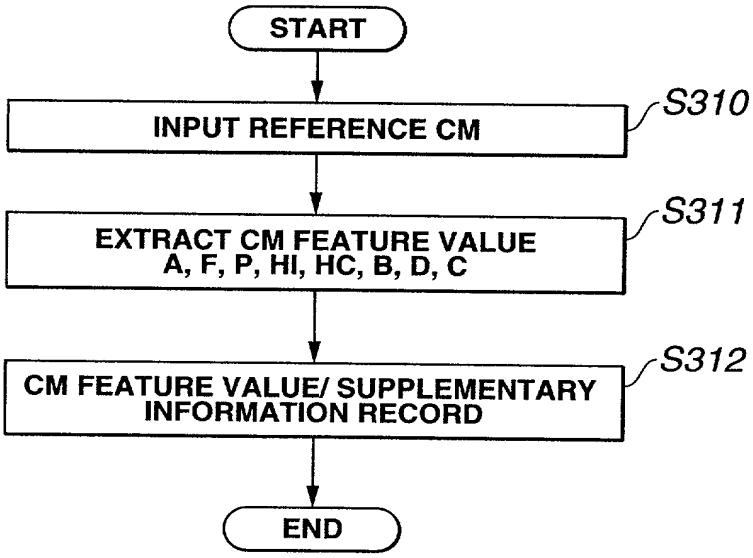

START
INPUT REFERENCE CM
S310
EXTRACT CM FEATURE VALUE
A, F, P, HI, HC, B, D, C
S311
CM FEATURE VALUE/ SUPPLEMENTARY
INFORMATION RECORD
S312
END

FIG.41

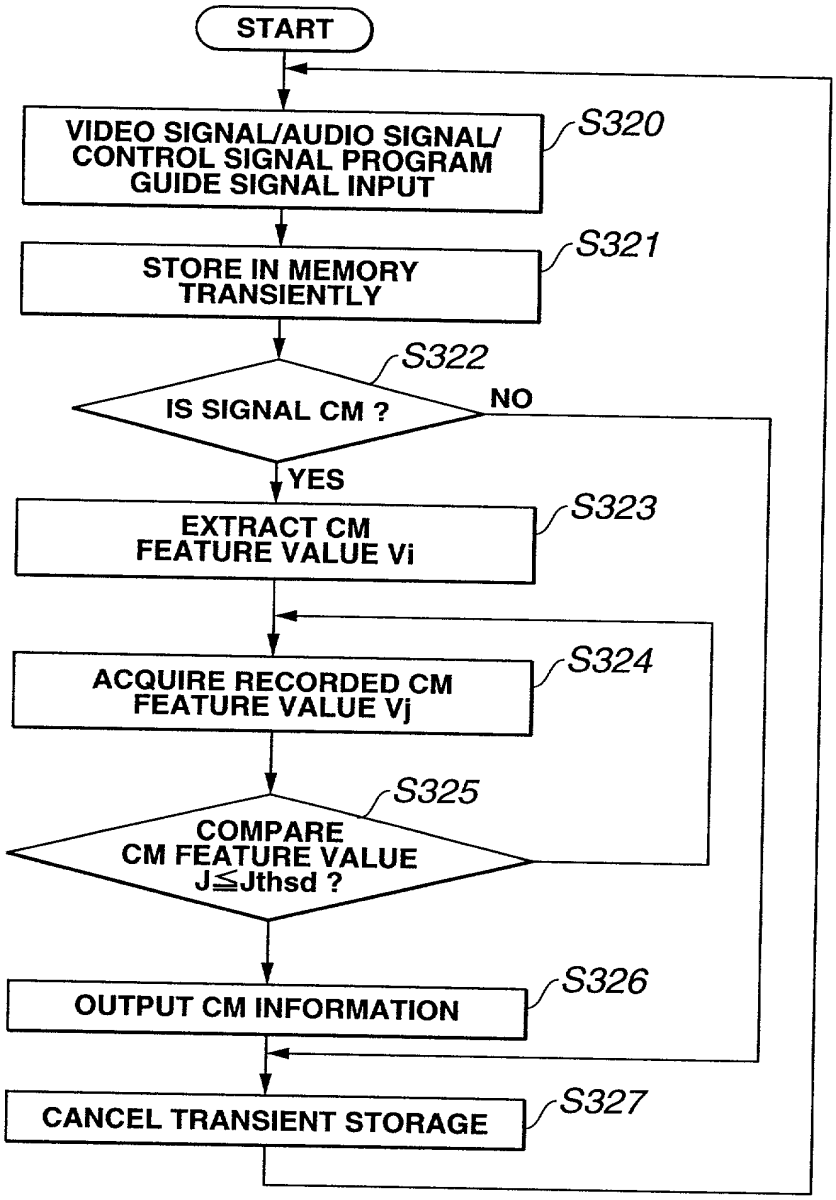

START
VIDEO SIGNAL/AUDIO SIGNAL/ CONTROL SIGNAL PROGRAM GUIDE SIGNAL INPUT
S320
STORE IN MEMORY TRANSIENTLY
S321
S322
IS SIGNAL CM ?
NO
YES
EXTRACT CM FEATURE VALUE Vi
S323
ACQUIRE RECORDED CM FEATURE VALUE Vj
S324
S325
COMPARE CM FEATURE VALUE J≦Jthsd ?
OUTPUT CM INFORMATION
S326
CANCEL TRANSIENT STORAGE
S327

FIG.42